SKANDINAVISKA BANKEN

AKTIEBOLAG

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SKANDINAVISKA BANKEN

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Head of Statistical Department, Stockholm.

Twentyfive years

THIS PERIODICAL herewith terminates its twenty-fifth year of issue.

The first number of our Quarterly Review was issued in 1920, at a time when business relations with foreign countries, which had been broken off by the war, were being resumed. At this time economic enlightenment service was but little developed, the economic statistics defective, and periodicals for foreign readers few in number.

On the other hand, great interest was shown abroad in information regarding conditions in Sweden, as is clearly indicated by the Skandinaviska Banken's correspondence. Replies to all manner of enquires from foreign business friends were facilitated by the production of this Quarterly. The new publication met with a favourable reception also from the bank's Swedish customers.

In this Quarterly the reports on economic conditions have always been on a rather small scale. From the first year of issue it may be noted, however, that the price index of the Quarterly was the first to record the advent, towards the end of 1920, of the great fall of prices in Sweden. In 1921 the effects of this crisis were reported — on the basis of circular enquiries — from Swedish industrial companies, and in 1922 the first signs that the nadir of the slump had been passed were indicated. In the first year of issue of the publication, various statistical surveys of the capital and money markets were introduced and have evidently been appreciated by our readers. Some statistical material was transferred in 1921 to the then newly started journal of the Swedish Board of Trade, „Ekonomisk Översikt".

The Quarterly also contains monographies on some thirty of Sweden's principal industries, most of them belonging to the *clientèle* of the Skandinaviska Banken. The value of these monographies has been enhanced by the publication of previously unavailable information regarding these companies.

The Quarterly has moreover had the privilege of publishing signed articles from some seventy Swedish contributors, representing science, industry and administration. These articles have been particularly appreciated abroad for the information they

have supplied regarding Swedish conditions. In many cases they have given rise to new contacts with foreign scientists, industrial companies and Government offices.

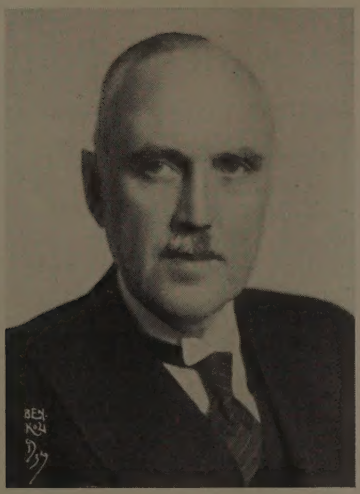
Among the contributors to the Quarterly, Professor Gustav Cassel holds a unique position. An article by him is contained in almost every issue. Moreover, his articles are in the nature of contributions to the international economic discussion and have aroused very special interest all over the world.

The Quarterly concludes its twenty-fifth year of issue under conditions which are strikingly reminiscent of those which existed at its start. Once more the time is coming to reestablish the foreign connections which had been broken off by the war. And the Quarterly may again be of service in spreading abroad some knowledge of Sweden's economic conditions.

Stockholm, October 1944.

The Editors.

THE MAN BEHIND THE WORK



Dr. Einar Huss, D. Sc.

Now that the Skandinaviska Banken's Quarterly Review, with this number, completes its twenty-fifth year of issue, it seems opportune to bring into the limelight the man who, in the capacity of editor, has been responsible for its contents during all these 25 years. After some year's meritorious work in Government service, Dr. Einar Huss in 1919 entered into the service of the Skandinaviska Banken as head of its statistical department. In this capacity he took the initiative in the issue of this Quarterly Review, which under his interested and expert editorship has developed into a periodical of about 12,000 copies, with a world-wide circulation. It is published in three languages, and has readers in almost every country on the globe.

It is not only the editorial work, involving the duty of procuring suitable articles etc., which has devolved on Dr. Huss. In addition, he has contributed to the contents of the Review by articles of his own, which have attracted much attention. Last but not least, by the economic survey which recurs in every issue, and which in most cases has been penned by himself, he has given the readers of this periodical a continuous review of Sweden's economic development through the years.

For the unstinting labour which Dr. Huss has bestowed on rendering the Quarterly Review a realiable and readable economic publication, the Directors of the Skandinaviska Banken desire on this occasion to convey to him an expression of their homage and thanks.

A RETROSPECT

BY PROFESSOR GUSTAV CASSEL

The quarter century which has elapsed since the origin of this Quarterly has been a very eventful period in the history of mankind. What has happened has been of such a sweeping nature as to leave no nation unaffected, and the errors made in different countries have been so glaring that they have shaken international intercourse to its very foundations.

These observations apply in a particularly marked degree to the economic sphere. At the time of the former world war the views held, even in governing circles, on important questions of political economy were much too primitive to meet the exigent demands that were to arise. Entirely new problems were to crop up, and existing problems were to assume such vast dimensions as to appear new and well-nigh insoluble. Previous experiences and once accepted axioms were to prove utterly inadequate to enable the authorities to grasp what was happening and to master the difficulties of the situation. The flagrant errors committed in economic policy, and especially in handling its international problems, revealed amazing deficiencies in economic insight. Elementary economic problems had to be studied afresh and the discussion of economic principles had to be carried much deeper. Endeavours to solve the practical problems which arose from time to time had always to start with a new review of the fundamental theoretical premises.

Such attempts at public enlightenment temporarily yielded some good results, and from the middle of the nineteen-twenties there were indications auguring a restoration of the world economy. But the old fallacies retained too strong a hold, and new errors in the management of the national finances again led to economic disorganization with disastrous consequences for all nations.

In course of time new economic theories were advanced, and attempts were made to remodel the national economy on hitherto untried lines. New economic questions thus arose for public discussion, and the authorities were confronted with fresh difficulties in judging the practical issues involved in the various projects. Problems of this nature have assumed great importance during the last few years.

In these circumstances, the institution of the Skandinaviska Banken's Quarterly Review, which, with its three editions in different languages, has provided a forum for international discussion, was of inestimable value for us in Sweden. Its primary purpose has been to throw light on the situation at each juncture by the compilation and publication of illuminating statistical material. My work as contributor to it has been greatly facilitated by the valuable assistance thus afforded.

The generation which has grown up during the inter-war period, and whose turn has now come to assume responsibility, may find it difficult to form any true conception of the course of events indicated above, and can scarcely realize what efforts were required some twenty-five years ago to overcome the deficiencies in economic insight. By looking through the different volumes of this Quarterly they could, however, obtain some idea of the actual situation, and of the problems that had to be tackled, at the time. It is also evident that the lessons taught us by the mistakes of the inter-war period have not yet been sufficiently taken to heart. Indeed, we run a manifest risk of repeating, in new forms, the errors of the past. For this reason too, the younger generation would find it useful to follow the discussion of economic problems and of the actual course of events which has been carried on in this periodical during the past twenty-five years.

I shall now proceed briefly to review some of the principal questions which have been under discussion during the existence of this Quarterly,

giving some references to issues on which I have written articles intended to illuminate those questions.

One of the consequences of the former world war was a general inflation of currencies. Though there had been previous experiencies of inflation, such experiences seem to have been almost forgotten, and in no country were people willing to recognize that a real depreciation of its currency had occured. Not even in Germany did the very intense inflation during the war and its aftermath suffice to open people's eyes to what was actually going on. Even the Swedish Riksbank refused to see the unmistakable tokens of the real and greatly progressive depreciation of the German mark. The general public all over the world clung to the primitive notion that the explanation of the incontestable increase in the note circulation must be sought in various temporary factors, such as "dear times", and it took long to get people to realize that the increase in the note circulation was mainly a symptom of a continous inflation, which was bound to force up the general level of prices (1921, I). Indeed, we may ask whether this fact had been fully realized even at the beginning of the present world war, when efforts were made everywhere to explain away the price advances and to prevent people from realizing that a real depreciation of the currency had again set in.

No less profound was the ignorance regarding the true significance of deflation (1921, III). After the war people imagined that the purchasing power of the currencies could be raised by work, thrift and other virtues, not realizing that this object could be attained only by lowering the general price level in the country. They did not understand what narrow limits were set for such a policy of deflation, and therefore talked in a rather airy way of restoring the currencies to their pre-war values. In different countries people clung obstinately to the belief that such a restoration was useful or necessary, the general notion being that the difficulties could be overcome by a *slow* continuous increase of the internal value of a currency up to a point fixed in advance. Such a policy, however, proved to be quite impracticable and merely resulted in abandoning the currency to international speculation.

In the United States the process of deflation was continued long after it had ceased to have any real *raison d'être*. It was proclaimed that the pre-war price level must be restored and, as the business world had been led to suppose that such a programme would actually be carried into effect, all confidence in the future suddenly broke down; and America in 1929 passed through an unparalleled crisis, accompanied by a devastating depression, which in the nineteen-thirties resisted every effort to check it, and which spread its ruinous effects all over the world.

During the former world war the views regarding the factors which determine the rates of exchange were, generally speaking, very primitive, the marked fluctuations in those rates being attributed to temporary disturbances in international commerce. That the rate of exchcange between two different currencies must depend on the ratio between their internal purchasing power was an idea which seemed utterly foreign to the then world. When, on the basis of this idea, I launched my theory of the purchasing-power parity, it had quite a revolutionary effect. It was received in many quarters as though the doors had been thrown open to a completely new view of the international currency problem. At the same time, however, it aroused very sharp opposition. Stress was laid by its opponents on certain deviations from the purchasing-power parity which were shown by the actual trend of exchange rates. These deviations, however, were nothing but over- and under-estimates of certain currencies, due to very special reasons, and which in no way shattered the fundamental basis of the theory. The very ideas of under- and over-estimation of a currency, which afterwards were to assume such a central position in the international discussion, were in fact inconceivable so long as the purchasing-power parities were not recognized as a normal basis for the rates of exchange (1923, I and 1924, IV)

During the former world war the general expectation was that the exchange rates would recover their pre-war levels when the war was

once over. It was not realized that a veritable depreciation of the various currencies had actually occurred. As this depreciation varied greatly in degree, the normal levels of the exchange rates must necessarily be entirely different after the war than in 1914. Failure to recognize this fact led for many years to grossly erroneous views regarding the rates of exchange which should be aimed at, the consequence being that many blunders were made in practical currency policy and in official proclamations regarding the goal to be set up.

The prevailing haziness in regard to the real nature of the exchange rates was naturally reflected in dealing with the question of the restoration of a gold standard. At the beginning of the quarter-century under review, such a restoration was doubtless desirable as the quickest way of escape from the chaos which prevailed in the world monetary system. It took, however, a long time to realize that it would be necessary to fix new gold parities, corresponding to the depreciated purchasing power of the currencies; and for many years national vanity prevented several countries from recognizing the necessity of drastically reducing the gold parity of their currencies. This led to far-reaching disturbances in the entire world economy (1922, II).

On the other hand, it was naturally a matter of paramount importance that the United States should not raise the value of the dollar, as any such rise was bound to entail a corresponding increase in the value of gold, thus rendering it extremely difficult for other countries to restore the gold standard. It was, however, by no means easy to win recognition for this apparently very simple truth. When England in 1925 reverted to a gold standard at the former par, it was essential that the value of the dollar, and thus also of gold, should not be raised by a process of deflation in the United States. Such a rise was bound to force England into a corresponding deflation, which that country's economy could not stand. Unfortunately, that truth was never clearly realized. Those who were opposed to a restoration of the gold standard declared that the fault lay in the adoption of an unduly high gold parity. There may be a grain of truth in this assertion, but what chiefly damaged England during the following years was the unreasonable endeavour made by the United States to force prices down to their pre-war level (1929, IV). The error then made in judging the situation is still influencing public opinion in England and is a great impediment to the conclusion of a currency agreement between England and the United States. A *sine qua non* for such an agreement is that the United States should desist from any attempt to raise the internal purchasing power of the dollar.

A rational restoration of the world economy was greatly impeded in the nineteen-twenties by the demands for reparations from Germany. Not only did these demands exceed what Germany could reasonably afford, but compliance with them was rendered practically impossible by the unwillingness of the victorious countries to import German goods. Somewhat similar conditions were manifested in regard to the payment of other war debts. The United States, then the leading creditor country, successively raised their customs duties to a very high level, thus placing difficulties in the way of payments to America. Though the war had converted the United States from a debtor to a creditor country, they refused to take the obvious consequences by accepting a large import surplus in payment of their claims. Controversies regarding these questions proceeded throughout the nineteen-twenties, impeding the development of world commerce and especially a restoration of the world monetary system. Even after the demand for reparations had been written off, a disproportionate accumulation of gold in the United States continued, thus conducing to aggravate the shortage of gold in other parts of the world. The consequence was that England in 1931 was compelled to abandon the gold standard, the restoration of which had been achieved with so much effort. England's example was generally followed, and all the endeavours made in the nineteen-twenties to reconstruct the international gold standard system were thus brought to naught.

An idea which naturally suggested itself was to counteract the shortage of gold by restricting the monetary demands for that metal (1926, IV). From 1929 to 1932 the League of Nations,

through its gold delegation, made great efforts to arrive at a solution on such lines. All these efforts, however, were in vain so long as the United States persisted in increasing their stock of gold, and so long as such general haziness prevailed regarding the conditions for a restoration of the world monetary system (1932, III, and 1933, II).

In the United States, the process of deflation as above mentioned, led to a severe crisis, followed by a period of lack of enterprise and general stagnation in the business world. When Roosevelt acceded to the presidency, a general collapse of the banking system was impending. He sought a way out of the difficulty by immediately abolishing the gold standard and annulling the validity of all agreements for payment in gold. Confidence in the right of the citizen to receive payment in gold was thus shattered, and there was but little prospect that such confidence would ever be restored. There could then be no more question of a real gold standard, and the world had to seek other ways for a stabilization of its monetary system.

The discussion of this problem has since continuously proceeded without leading to any definite result. True that Roosevelt in 1934 fixed a new, considerably reduced, gold parity for the dollar. As the price of gold, reckoned in dollars, was thus at once raised by nearly 70 per cent., the value of the gold reserves was increased in the same proportion; gold production was intensely stimulated and increased far beyond what the previous value of gold might have led one to expect. In this way monetary attempts at stabilization were no longer impeded by a shortage of gold. But, as gold had forfeited its position as a basis for the international monetary system, the new abundance of gold was of little use for a reconstruction of that system.

In point of fact this problem is still unsolved. In 1943, it is true, proposals for the organization of an international monetary system were submitted both from British and American quarters. But these proposals could scarcely have any value so long as the cardinal point of the problem, which was to find a rightly adjusted rate of exchange between the pound sterling and the dollar (1943, IV), remained unsettled. Such a rate of exchange, of course, implied stability in the internal purchasing power both of the pound and of the dollar. In view of previous experience, it was particularly necessary to obtain a definite guarantee that the United States, by a new process of deflation, would not force down their level of prices and compel England to follow suit. Negotiations on this question continued into 1944, and in April a compromise, the effects of which we are still awaiting, was submitted.

The economic depression in America during the nineteen-thirties assumed very ruinous proportions and was a disturbing factor of the first order for the whole world economy. In view of the prevailing misconceptions and misinterpretations, it was important to throw light on the real nature and causes of the slump, and I devoted much attention to this matter (1932, IV, 1938, I, 1939, IV, and 1941, I).

A discussion regarding the essential nature of economic trends proceeded during the whole interwar period. In certain quarters it was contended that economic fluctuations were determined by fate and that all we had to do was to reckon out, with the aid of mathematical curves, how they would shape. I combated this modern form of astrology (1933, I, and 1942, I). On the other hand, it was asserted that economic trends were merely a consequence of the capitalist system and of the scope which it gave for free enterprise. I have endeavoured to show that this view had no basis in modern experience. During the present century the great crises have been caused, without exception, by errors in the economic policy of States and in their management of the monetary system and especially, of course, by their incapacity to bring about peaceful intercourse between the different peoples of the globe. The events and vicissitudes which I have reviewed above furnish conclusive evidence in favour of this view. In such circumstances it seems rather strange that, in order to avoid economic crises, attempts should be made to construct a new social order in which greatly extended powers in regard to the management of the national economy would be conferred on the State, and in which private industrial or commercial undertakings would be

placed under the complete control of State authorities.

Plans for a new social order have been launched in recent years with increasing claims to attention, and have undoubtedly conduced to lessen interest in normal progress. I have devoted a few articles to such plans (1942, II, 1943, II, and 1944, II and III). On the other hand, I have endeavoured to give some idea of the immensely rich possibilities afforded by the progress of science, technique and business organization for a general advance in the effectiveness of the world economy after the war. (1944. IV).

THE ACTIVITIES OF THE COMMERCIAL BANKS[1]

BY ERNST C:SON HERSLOW,
MANAGING DIRECTOR, SKANDINAVISKA BANKEN AB., STOCKHOLM

To give, within the time at my disposal, a complete and exhaustive survey of the activities of the Swedish commercial banks is obviously impossible, nor will I make any attempt to do so. I will confine myself, instead, to setting forth some views regarding the function in the national machinery which the commercial banks are fulfilling at the present day, and will try to throw light on some of the developments which have led them on to this position.

It seems rather gratuitous, before this audience, to try to define the term "commercial bank", nor would it be easy to give a fully covering definition. I will therefore confine myself to indicating, in quite a summary way, some features which are particularly distinctive of commercial bank activities as compared with those of other credit-granting institutions. It should be pointed out, to begin with, that the first commercial banks which arose in this country were intended to follow up the credit-granting business which the big merchant houses, with the aid of their own and foreign capital, had been carrying on for the benefit of the then relatively small industrial activity in Sweden. When, in the course of the nineteenth century, these activities were greatly extended and the industrial revolution began to set in, the requirements of credits became too large and the risks too great to be supplied by private persons. Hence it was the need of credit facilities on a broader basis that gave rise to the first commercial banks.

Pioneers of Credit-granting Institutions.

The commercial banks were thus, from the very outset, special banks for the money transactions of industrial and commercial undertakings, and this has throughout been the most characteristic feature in their operations. This, of course, does not imply that the commercial banks are the only institutions which grant business credits: for, as we know, a considerable part of the credits granted by savings banks, mortgage banks and agricultural credit societies redounds, directly or indirectly, to the benefit of industry and commerce. But, in certain respects, there is a fundamental distinction between the credit business of these financial institutions and that of the commercial banks.

Firstly, it should be noted that the commercial banks always have to lead the way when it comes to the grant of credits to newly created or growing enterprises. When, for example, a house is to be built, the commercial banks grant a building credit; and, when an industry is to be started, the necessary capital, over and above its own, is supplied through the commercial banks. Not until the house is completed or the industrial undertaking has acquired the necessary stability, do other financial institutions step forward and take over the more risk-free part of the grant of credits against first mortgages, in the form of bond loans, and so forth. The commercial banks have therefore been designated, with good reason, as the pioneers of the financial institutions.

The Banks' Credit Risks.

A further distinction between the credit business of the commercial banks and that of other financial institutions is that the risky credits are always held by the commercial banks pending the time when they may be redeemed after the internal consolidation of the undertaking.

It is thus evident that the commercial banks are burdened with the most risky part of the

[1] Address delivered on the 21st June 1944 before a conference of commercial teachers arranged by the Swedish Society for Business Education.

credits, as it is obviously during the period of growth, before it has been found whether the created undertakings are profitable or perchance miscalculated, and afterwards in the top credits, that the greatest risks of losses exist. This explains why commercial banks are obliged to operate with larger interest margins than other financial institutions usually do; for however cautiously a business undertaking may be planned it may happen that losses arise owing to unforeseen events or in times of crisis. So far as such losses exceed the resources of the undertaking itself, the need for cover will inexorably fall in the first place on the commercial banks, which will thus have the largest items to write off.

Banks as Joint-stock Companies.

Another marked distinction between the commercial banks and the other credit institutions is that the former, unlike the latter, operate as joint-stock companies. This form of organization has been found to be the most desirable, precisely in view of the greater risks to which the commercial banks are exposed. The risks which they incur in the credit business are greater than, *e. g.* those of the savings banks, but they desire to have the same security for the deposits. They cannot, therefore, like the savings banks, allow the deposits and advances practically to balance one another, but wish to have between them, so to speak, a "buffer", intended primarily to protect the deposits against stormy changes in the financial situation. The buffer serving this purpose is formed by the share capital and the reserves, which, in case of emergency, will be used for writing-off, when losses incurred cannot be covered in any other way.

In the propaganda resulting from competition between the credit-granting institutions, it has sometimes been designated as a mark of inferiority in the commercial banks that their profit must cover a reasonable dividend to the shareholders. Even setting aside the manifest advantage for the depositors of having the share capital to resort to as a "buffer", or emergency reserve, this judgment is quite unjustified, unless the dividends are unreasonably high. For the financial year 1943 the Swedish commercial banks paid dividends averaging 4.63 % on the aggregate capital and reserves, which can scarcely be regarded as an unreasonable interest charge on a capital exposed to risks.

Change in Structure.

From the observations I have made regarding the relations of the commercial banks to industry, it may be inferred that the banking activity had been fairly uniform and unchanged throughout. This, however, is by no means the case. On the contrary, we note considerable variations in the mode of operation of the commercial banks, depending on the development of industries, fluctuations in the economic trend and amendments in the bank laws. Especially in the course of this century these changes have been so marked that it may be stated with good reason that the commercial banks have changed their structure.

Deposits.

A very striking change, for example, is that the commercial banks nowadays do not hold anything like as large a proportion of the accumulated savings in the country as before. The general rise in the standard of living has in fact changed the nature of the flow of capital. At the end of the last century Sweden was still a poor country. A large part of the capital then accumulated was readily absorbed, through the commercial banks, by industries whose "foundation" period was not yet terminated. According as the industrial revolution progressed, prosperity increased among large sections of the population, who thus obtained greater facilities for saving. These savings found their way primarily to the savings banks and insurance companies, whose administered capital thus swelled in a far greater degree than that of the commercial banks. As late as 1918, the capital administered by the savings banks (including the Post Office Savings Bank) and the insurance companies amounted only to 62 per cent. of that of the commercial banks, whereas the corresponding

proportion at the end of 1943 was no less than 184 per cent. Thus whereas in 1918 the commercial banks held roughly two-thirds and the other financial institutions one-third of the total deposited savings, twenty-five years later the commercial banks held one-third and the other institutions two-thirds. It is thus evident that savings nowadays are finding their way, in increasing measure, to other financial institutions, and that the commercial banks no longer predominate in this respect.

Loans and Advances.

The changes which I have just pointed out thus apply to *deposits*. Marked changes in the structure of the commercial banks have occurred also in regard to *loans and advances*. Whereas the capital resources of the commercial banks formerly did not as a rule suffice to cover the requirements of industry, but often had to be eked out by rediscounting in the Riksbank, it has been found that the business world nowadays has not full use even for the reduced capital (viewed relatively to the total savings) at the disposal of the commercial banks. The consequence is that the commercial banks have been trying to find use for their large idle cash reserves by extending their advances within spheres which were formerly of minor importance for them, namely by increasing their loans to State institutions and by granting advances on the security of real property.

In order to throw light on these developments, I shall now give some figures indicating the changes in the magnitude of the advances granted, in different forms, by the commercial banks during the past *thirty years*.

The discounting of bills of exchange, which in 1913 amounted to 667 million kronor, culminated in 1920 at 2,401 million kronor. It gradually fell to 950 million kronor at the end of 1943. The decline is attributable, at any rate in part, to the fact that business at present is not on its normal scale.

Advances against guarantors' bonds, which in 1913 amounted to 352 million kronor, reached a maximum of 1,052 million kronor in 1920. Afterwards they gradually fell to a bottom figure of 469 million kronor in 1941. During the last few years they have risen again, reaching 592 million kronor at the end of 1943.

In view of the fact that the total assets of the commercial banks have risen by 150 per cent. during the 30 years' period, the total increase in the advances against bills of exchange and guarantors' bonds, being about 45 per cent., is remarkably small.

The sum-total of the bank's *share holdings and advances on the security of shares* amounted in 1913 to 722 million kronor. During the former war this item showed a very marked increase, culminating in 1919, when the amount had risen to 1,951 million kronor, being nearly three times as large. It then gradually fell and at the end of 1943 had been reduced to 622 million kronor, or 100 million kronor less than in 1913. In view of the hard times which will certainly ensue as the aftermath of the present war, this, from a security point of view, is a gratifying development. Moreover, as the margin of safety in loans on the security of shares is now far larger than was formerly the case, it may be expected that, in the event of a crisis, the forced sales of shares and the consequent writing-off may be viewed, in this regard, with less concern.

The item *bonds owned or held in pledge* amounted in 1913 to 339 million kronor, rose during the former war, and from 1922 to 1940 remained rather constant betwen 700 and 800 million kronor. In the course of the last three years, however, this item has risen to no less than 1,920 million kronor, or to more than $5\frac{1}{2}$ times the figure for 1913. The increase is entirely due to the larger holdings of Government securities.

Mortgage loans show a rather steady increase from 767 million kronor in 1913 to 2,338 million kronor in 1943, the latter figure being thus more than three times as large as the original amount.

If we now divide the "advances side" of the commercial banks into two groups, reckoning together, on the one hand, their own share holdings and their advances against shares, bills of exchange and guarantors' bonds, as being roughly

indicative of the banks' original field of credit, and, on the other hand, bonds, Government securities and mortgage loans, as being investments which had formerly been of minor importance, it will be found that in 1913 the first-mentioned group represented 61.3 per cent., and the latter 38.7 per cent. of the total investments of capital. This proportion remained, broadly speaking, constant up to 1922, when one began to notice an incipient change, which has been accentuated in the course of the last few years. In 1943 the original proportion had been completely reversed, in that the former group had fallen from 61.3 to 33.4 per cent, whilst the latter had risen from 38.7 to 66.6 per cent.

Concequences of the Change in Structure.

From the described changes in the activities of the commercial banks, certain conclusions can be drawn in regard to economic developments in this country during the last few decades.

As already indicated, a very considerable proportion of the increased savings of the broad strata of the population has gone to the savings banks. This increased influx of capital has been invested by them, to a large extent, in less risky objects, especially in the production of dwelling-houses. This production, however, has not been thus satiated, but has also found use for a considerable part of the surplus capital of the commercial banks. As we know, building activity has shown an immense expansion during this period, stimulated, as it has been, by low interest rates, State subsidies and various measures of organization.

Another considerable part of the increased savings has found its way to the insurance companies. According as prosperity has increased, people have had greater facilities for making provision by insurance for their old age and for the security of their families. The capital accumulated in the insurance companies has been partly invested on the real estate market, but has been especially used for increasing their bond holdings. In this connection the immense increase in Government borrowing during the last few years has been a factor of considerable importance.

Finally, it can be inferred from these figures that the credit requirements of industry have not increased at anything like the same pace as its expansion. This is due to various factors. As previously mentioned, the great "foundation" period, which marked the end of the last century and the first decade of the present century, had, broadly speaking, been terminated before the outbreak of the first world-war. Industrial requirements of credits for expansion had diminished, and the credits previously received were rapidly paid off. The need of working capital has also decreased, which is due, in some measure, to reduced exportation in consequence of the war, but also to the increasing tendency to self-support in regard to capital. This latter must be attributed to a highly remarkable change of mentality among the leaders of industry and commerce. Even after the former post-war crisis it could be noticed how certain companies, made wise by smarting experiences, began to reflect in earnest about their liquidity position. They no longer aimed so high in regard to expansion, but pursued a more cautious dividend policy in order to avoid having the bank gentlemen at their heels when bad times set in; and they set to work in earnest to study the writing-off necessitated by the depreciation of plant, in regard to which, with all respect for an earlier generation, they seem to have had rather vague ideas. For those companies which had not yet had their eyes opened, the Kreuger crash came as a second warning. After that shock, we have witnessed a tendency towards consolidation in industry and commerce which has entailed a hitherto unknown liquidity and, to a large extent, has carried companies previously in receipt of bank loans over to the deposit side of the commercial banks.

Amendments in Bank Laws.

In the foregoing I have shown how the course of industrial development has forced the commercial banks into adjustments which have entailed marked changes in their activities. There

are, however, also other circumstances which have affected their lines of development, and among them we must reckon the zigzag course of bank legislation.

It is rather instructive to see how the amendments in the bank law, with a certain time lag, have followed the fluctuations in the economic trend curve. In other words, the legislators have endeavoured to guide the development of the banks along the lines which, in view of the experience of the immediately preceding economic situation, they deemed to be most desirable. But, as the economic curve alternately rises and falls, this has entailed a striking to-and-fro movement in certain sections of the bank law. When the economic trend has been moving upwards and the consequent expansion of industry and commerce has increased the need of credits, the banks have been criticized for their restrictive policy, and endeavours have been made, by dint of legislation, to encourage them to give greater support to expansion. Then, when a crisis with its consequent credit losses set in, solicitude for the security of bank deposits became the dominating concern of the legislators, whilst the bank directors were severely criticized for having failed to foresee what appeared so obvious after the event. Bank legislation was thus made more restrictive, in order, after another oscillation in the economic curve, to be once more relaxed.

At present we have a bank law which was passed a few years after the Kreuger crash and is consequently rather restrictive. Owing to the satisfactory liquidity of industrial companies, there is at present no desire for relaxation: on the contrary, greater caution seems desirable in view of the hard times which will certainly come after the war. It may be noted, however, that the creation of new enterprises beyond the spheres of interest of those already in existence has been remarkably small during the last decennium. Industries such as SKF (the Swedish Ball Bearing Company), AGA (the Gas Accumulator Company), Separator or Elektrolux could scarcely be started and flourish under the present regulations of the taxation and bank laws. Whether the bank law should remain as restrictive as at present, the future must show. It is, however, conceivable that people will one day find that this country is sadly behind the times in regard to the creation of entirely new spheres of production, and that they will therefore consider it desirable once more to encourage enterprise, which cannot be done without affording greater inducements for investors willing to risk their capital.

Other Banking Activities.

The activities of the commercial banks which I have so far described relate mainly to their deposits and credits. I shall now briefly touch on their general commercial activites. In the respective bank departments too there have been marked changes: they are not, however, so remote in time, being more closely connected whith the problems which have arisen in recent years. The war has entailed a great decrease in the trade between Sweden and foreign countries. And, as most of the foreign business of the Swedish banks is connected with exports and imports, this business has markedly declined. At the same time striking changes have taken place in the nature of the transactions.

During the pre-war years, payments for goods to and from foreign countries were made for the most part on or after the receipt of the goods by the buyer. The seller transmitted the shipping documents through a bank and a draft or invoice for the sum to be collected from the buyer —, in cases where the buyer had not remitted the amount of the invoice to the seller in cash. Payments by documentary credits were then, generally speaking, on a minor scale, being chiefly resorted to for the exportation of certain staple goods, such as pulp and wood goods, or the importation of *e. g.* coffee, cereals and feeding stuffs. Owing to the international confidence crisis which has resulted, during the war, from the irregularities in regard to payment and transport, there has been a very marked increase of documentary credits, both in value and in number. In my bank, for example, these credits have been more than *trebled* in *value* and approximately *decupled*

in *number*. At the same time, in consequence of the changes in Sweden's commercial exchanges with foreign countries, the trend of such transactions between the countries has shifted. Thus documentary credits for exports to overseas countries have shown a great decrease, whereas for exports to the European Continent they have markedly increased.

Still more striking is the change in the dealings of the commercial banks in various foreign currencies. These transactions have shown a very marked decrease. Though statistics which might serve to throw light on the trend are not available, the present dealings in foreign exchange may be estimated at merely 15 to 20 per cent. of those immediately preceding the outbreak of war. Besides the diminished commercial exchanges, the chief reason for this is that free payments between the countries have been stopped by currency restrictions and to a very great extent replaced either by clearing agreements, such as those concluded by Sweden with Germany, the occupied countries, the Soviet Union, Italy and Spain, or by special payments agreements with Great Britain and Turkey. The clearing payments do not give rise to currency transactions, and the rigorous State control over international payments, especially the control agreement with the United States, has fettered the banks' liberty of movement on the currency market. Arbitrage transactions have thus been almost entirely prevented. State control has conduced greatly to increase the share of the Riksbank as a contracting party in the foreign exchange business of the commercial banks: it may now be estimated as five or six times as large as before the war. This is especially due to the fact that hedging of the dollar against exchange losses or transfer stoppage can be effected only through the Riksbank, whilst the foreign exchange required for the payment of imports must be bought from that bank.

As payments to and from foreign countries have thus been directed into new channels, the collecting of foreign drafts has beeen greatly reduced and the use of cheques for payments to and from foreign countries has shown a dismal decline. This is partly due also to the irregular postal communications, which have made it necessary to resort to telegraphic remittances.

Also in regard to transactions in securities, several significant changes may be noted. Dealings in shares on the Stockholm Stock Exchange have markedly declined, and speculative buying has, generally speaking, ceased. The interest of buyers has been concentrated, instead, on purchases of shares for investment purposes; and that part of the share material which has been placed for long-term investment in firm hands appears to have been considerably increased, so that the part usually available for the market has been correspondingly curtailed. Issues of shares, in the ordinary sense of the term, have been rather rare, which strikingly contrasts with the conditions during the former war, when such transactions proceeded with hectic intensity. Issues of bonus capital, on the other hand, have occurred in certain years on a rather considerable scale.

The bond market has been dominated, in an increasing degree, by Government bonds, as a natural consequence of the greatly increased State borrowing, whereas the issues of the mortgage banks have shown merely a slight increase, and industrial loans have diminished year by year, owing to the improvement in the liquidity of industrial companies and the lack of new enterprises. On the part of the large investors the demand for good investments has been remarkably great, and the immense issues of Government bonds have been readily absorbed by commercial banks, savings banks, insurance companies, etc., whose bond holdings accordingly show a very marked increase. On the other hand, the share of the general public in bond purchases is still relatively insignificant.

In the trust departments of the commercial banks, business has greatly increased. This seems to be chiefly due to the fact that holders of securities, owing to the war, have found it expedient to utilize the facilities of the banks for bomb-proof keeping and have accordingly placed their securities in the custody of the banks. Business arrangements connected with these securities, such as reinvestments, new in-

vestments, administration of estates, etc., have thus been dealt with, on an increasing scale, by these departments.

Relations of Commercial Banks to Industry.

As givers of credit, the commercial banks have always been in close cooperation with industry. It seems therefore desirable briefly to indicate how this cooperation has developed during different periods up to the present day.

As previously noted, the commercial banks during the industrial development at the end of the nineteenth century and the beginning of the twentieth found it difficult enough to supply the capital requirements of Swedish industries. This is always the case in periods of great expansion. At such times there is a great increase in consumption. The larger spending power creates a demand for new kinds of utilities and articles of consumption as well as for the improvement and modernization of those already in the market. New enterprises arise, whilst existing ones are extended and enlarged. The need of capital increases, whilst production and commerce roll gaily on, of their momentum.

Difficulties involved in the Grant of Credits.

During such periods dangers lurk in the grant of credits, and it is then that the judgment of the bank directors is put to the test. How easy it is to make an error of judgment in rating the credit capacity of a company, an error which will not reveal itself until later, when bad times supervene. There are so many sources of error, so many possibilities of making a wrong estimate. It may be due to the fact that an enterprise has been miscalculated from the outset, or, if the calculations are correct, that during its period of growth it has to pass through such serious "infant maladies" that profits decline to appear, whilst the burden of indebtedness continues to increase. It may be due to the fact that the competitive power of an undertaking has been reduced by the origin of new and cheaper methods of production, based, maybe, on different and cheaper raw materials. Last but not least, the fault may lie in bad management. In what an extremely high degree the success and progress of an undertaking depends on its leader is not always realized by the general public, but this is a lesson which dearly bought experience has brought home to the directors of commercial banks. There is no undertaking which is so good that it cannot be marred by bad management, and there is scarcely an undertaking which is so bad that it cannot be revived by good management. In regard to the grant of credits, the problem is sometimes complicated by the fact that an unskilful leader may show great skill in manipulating the books so as to disguise the company's real position.

Then comes a day when the economic trend changes, the curve falls, the volume of production is reduced and the fall of prices sets in. The banks will then begin to find out what mistakes have been made in their grant of credits and what companies or undertakings are likely to cause them concern. I have sometimes compared a commercial bank with a sieve. That which flows clearly and gaily is what passes through the sieve, but the dregs are caught on the filtering cloth, and *these* the banks must clear out.

Treatment of Frozen Credits.

It is, of course, primarily in the interest of the banks to save as much as possible of their frozen credits, but — and this is a point which must be strongly emphasized —, they should thoroughly investigate whether it would not be possible, by new advances of capital, to infuse fresh life into an undertaking which it would perhaps be more convenient to wind up, but the closing down of which would entail great social troubles. This, of course, involves the risk of throwing good money after bad, but if a bank discerns any possibility of keeping the undertaking alive, it will doubtless hazard the attempt.

When a company begins to get on the downward grade, the credit-granting bank should first endeavour, by careful investigation, to ascertain where the fault lies and — often in connection with fresh credits — should insist on such

measures of organization as may be calculated to restore profitability. "Help to self-help" is the slogan. If things go well, the company will recover and can gradually reduce its credits to a normal scale, thus freeing itself from dependence on the bank. If things go badly, the bank must take more rigorous action. It will then be necessary to effect a thorough reconstruction, which is often connected with the writing down or off of the former capital and the conversion of bank claims into new share capital. In this way the bank will acquire a direct owner's interest in the industry in question. Then the undertaking must, so to speak, be schooled and nursed, be placed under efficient management and properly organized, in order that, perhaps after many a long year, it may become so vigorous that it can be released from its close connection with the bank by the sale of the share capital and its transfer to private hands. Only in quite hopeless cases will a bank proceed to close down an undertaking.

"Mastership over Industries".

It is psychologically quite intelligible that the commercial banks do not make themselves popular by the measures they are forced to take when an industry gets into distress. Even when a bank has to increase its control of a company whose credits are in excess of good banking principles, the directors of the company are liable to get irritated. If the bank goes still further and has to resort to a reconstruction which falls hard on the shareholders, their disappointment and rage is usually vented on the banks. This is why, after the culmination of a boom, we often hear people speak of the so-called "mastership over industries". In some quarters it is fancied that the banks have an innate desire to fasten thier claws in as many industries as possible, presumably in order to suck them to the utmost.

Without attempting to pronounce any judgment on this point, I will draw attention to two existing facts which argue against the justification of such a view.

Firstly, the interests of a bank are always best served by having customers of such a character that they need not in any way cringe to their bank connection. The bank which has the best clientèle will have the least losses and therefore the best financial results. Consequently, that bank which does *not* possess any financial power over its customers is in the best position.

Secondly, it is one of the brightest moments in the existence of a bank directorate when, after many years' intensive efforts, they have managed to wind up the ownership of an industry. This may appear to be an unproven statement, but it can be corroborated by anyone who has had to do with the management of a commercial bank. People are so liable to forget to what extent Swedish industries at some time during their development have been in receipt of bank credits which in many cases have exceeded normal banking limits, — industries which thus have once been bolstered up by their bank, though they may afterwards have grown strong and independent.

I have amused myself by studying the Stock Exchange A-list from this point of view. From among the industrial companies listed there, I have grouped those which on some occasion have been directly reconstructed by a bank into category No. I, and those which at some time, in a very risky way, have been bolstered up by credits into category No. II. The market value of the shares in category I is 12.1 per cent. of the total market value of industrial shares, whilst the corresponding value of the shares in category II is 24.5 per cent. That is to say, industries whose shares amount altogether to 36.6 per cent. of the total market value have at some time during their development been specially supported by or, in popular language, have been "dependent" on, some sommercial bank. There is no denying that the commercial banks have rendered great service to the nation by these contributions, which should properly be designated as financial nursing, and not as a mastership over industries.

Another reason for this talk of a bank mastership lies in the fact that bankers are often on the boards of directors of industrial companies. On the other hand, we find that many representatives of industries are members of the boards

of commercial banks. This is quite explicable, as bankers and industrialists need one another's experience. When the banks have to consider the grant of credits to an industry, it is useful to have advice of men experienced in this field; and, conversely, industrialists will benefit by consulting the opinion of experienced bankers on financial questions. If any conclusions are to be drawn from these facts, in regard to the distribution of ownership, it may be quite as justifiable to speak of the power of industries over the banks.

The Aims of Credit Policy.

Before leaving this subject, I must raise the question whether it is bad policy for the commercial banks to grant such ample credits to industries that, after a change in the economic situation, the risk of credit losses may arise? Would it not be better to pursue such a restrictive policy in the grant of credits that such losses would be practically excluded? To this question I must reply decidedly in the negative. It is the duty of the commercial banks, within judiciously adjusted limits, to support capitalists willing to take risks in their endeavours to create new or larger possibilites for production, which may conduce to enhance the general prosperity. If, therefore, a commercial bank is *so* restrictive in its grant of credits that its losses, on a long-run view, are insignificant or nil, that bank will have scarcely fulfilled its mission in the national life. The great problem for a bank directorate is so to adjust the grant of credits that it will conduce to promote national progress without leading into deep waters.

Post-War Planning.

During the last few years it has become quite the fashion to busy oneself with post-war planning. I am referring not only to the big Government committee enquiries, but also to private activities in this line. We have seen in the press how at the annual meetings of societies and associations in almost every branch, post-war planning has been the principal subject on the agenda. It may be asked whether we have not gone further in this respect than is practical, and whether we have not worked ourselves up into a state of emotionalism, allowing our intense longing for peace to sublimate itself into a psychical urge to plan and discuss what is to come. It is indeed a very good thing that the Government have instituted enquiries in this field, so that the measures which may be taken will not, as has often happened, be of a temporary character, but framed with the objective clearly in view. Though private individuals should, of course, try to form some idea of post-war conditions, corporative planning seems to be of subsidiary importance. The principal thing is that everyone should set his own house in order and carefully plan his own economic arrangements for the future. The premises which must be assumed as a basis for post-war planning are in fact so uncertain and difficult to judge, not to say unknown, that developments may trend in a quite unexpected direction; and then the plans thus upset will be liable to cause confusion. We would do well, therefore, to "keep our guns loaded" and then adjust our tactics to actual developments.

Can it now be stated that the post-war preparedness of the banks is satisfactory? When the strain comes, there will certainly be two ways in which it will make itself particularly felt, notably in regard to liquidity and credit losses.

In regard to the first point, it is obvious that when international commercial exchanges are resumed, when the routes of traffic have been opened and the depleted stocks are to be replenished, the need of money will increase and the liquid funds of the banks will be drawn on. The Swedish commercial banks, however, have never before been so well equipped to meet coming demands. Their liquid funds in the form of cash, treasury bills and short-term Government bonds may at present be estimated at about 2 milliard kronor. If the purchasing value of money remains fairly constant, and if we are not plunged into a serious inflation, this liquidity must be regarded as rather satisfactory.

As for the second point — the credit losses —

it has already been pointed out that advances granted involve considerably smaller risks than before. Swedish industries have passed through a marked consolidation process in regard to internal strength as well as liquidity, so that their bank credits have diminished and are well secured. Loans on shares are a mere fraction of what they were during the former war, share prices are not speculative, and the margins for advances on such security are considerably larger than before. Foreign holdings have been reduced to a minimum, and the foreign bonds — mainly Scandinavian — held by the banks appear to be drastically written down, if not entirely written off. We are thus warranted in hoping that ruinous losses for the banks in these respects may this time be avoided. Other losses may naturally arise, perhaps when least expected; on the other hand, it should be borne in mind that our financial experience has been deepened, and that the headlong deflation policy which entailed great losses after the former war will presumably not be repeated.

Furthermore, the staying power of the banks should be greater than before. During the last ten years their direct writing-off has been rather small, whilst their dividend policy has been cautious; an internal consolidation has thus been effected. I am therefore optimistic enough to trust that the Swedish commercial banks, even under radically changed economic conditions, will be able satisfactorily to fill their place and discharge their functions in the national community.

DEVELOPMENTS IN AGRICULTURE SINCE THE FIRST WORLD WAR

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The part played by a country's agriculture during times of war or while its communications are cut off, both as regards the supply of the necessities of life and the necessity of maintaining its independent position in relation to the outer world, was demonstrated in the most striking manner during the period 1914—18, as it has also been during the second World War. It may perhaps be of interest to attempt to indicate what changes took place within Swedish agriculture during the period between the wars. Such an investigation must also supply the answer to the question why, in spite of two years' very bad harvests in 1940—41, we were able to manage our food situation as relatively well as we actually did. Some reflections on the future prospects of our supplies will also be added.

The General Position of Agriculture.

In this connection attention should be paid to the course of the development of agricultural conditions. After a great boom for both products and estate values in connection with the general inflation in 1917—18, agriculture went through a difficult adaptation crisis at the beginning of the 1920's, accompanied by greatly reduced prices for products, wages (nominal reduction about 50 %), and land values. Prices were nevertheless still above the pre-war level. The crisis starting in 1929—30 had a most devastating effect on agriculture during the years 1931—34. The prices of a number of important products then fell below the 1913 level, and the yield on capital was poor or was replaced by a loss.

The improvement, a result in the first place of measures in support of agriculture which were conceived successively and given effect to during the 1930's, began during the financial year 1934—35. The following years up to the outbreak of the second World War were characterized by relatively good harvests and unusually uniform

Table 1. Average yield for the investigated farms 1919—1939.

	%		%
1919–20—1923–24	*1.2*	1927–28	1.9
1924–25—1928–29	*1.9*	1928–29	2.1
1929–30—1933–34	*1.1*	1929–30	2.4
1934–35—1938–39	*4.1*	1930–31	1.3
1919–20	3.0	1931–32	—0.2
1920–21	0.2	1932–33	0.7
1921–22	0.5	1933–34	1.5
1922–23	0.6	1934–35	4.0
1923–24	1.5	1935–36	3.7
1924–25	1.0	1936–37	3.8
1925–26	2.5	1937–38	4.4
1926–27	2.1	1938–39	4.4

Table 2. Population engaged in agriculture and stock-raising exclusive of professional gardening. (According to the investigations of A. H. Stensgård.)

	1910	*1920*	*1930*	*1940*
Men.				
Farmers	358,439	339,493	335,166	331,016
Assisting members of family	189,345	167,736	158,054	148,474
Administration staff	2,133	3,351	4,313	3,369
Employees	191,233	190,757	177,078	141,431
Total of men	741,150	701,337	674,611	624,290
Women.				
Farmers	42,214	36,947	41,643	41,091
Assisting members of family	178,360	188,979	164,363	52,362
Administration staff	8	88	118	326
Employees	31,509	18,015	28,795	5,676
Total of women	252,091	244,029	234,919	99,455
Total of men and women	993,241	945,366	909,530	723,745

conditions, marked by steady returns and rising wages.

According to Professor Nanneson's investigations, the yield during the financial year 1919—20 up to and including 1933—34 for the farms examined was on an average only 1.4 % per year. On the other hand, for the following period up to the financial year 1938—39 the mean yield was 4.1 % per year. As appears from table 1, the economic results for separate years exhibit great divergencies from the course of development on the whole. The irrational factor, *the year's crop* — the result of the distribution of rain and sunshine, etc. — may mean more than the calculable factors.

On the whole the variations in the prices of farm products have not corresponded to the adjusted prices of necessities. On the expenditure side of agriculture, however, a predominating item is to be observed — on the whole somewhat more than 50 % of the total expenditure — namely, the cost of labour. It is this which has constituted the great balancing factor, and which in the main has had to adjust itself to the ruling price level for agricultural products.

The Development of Production.

From these general starting-points, intended to illustrate the economic pre-conditions and the economic results on the whole during the period between the wars, we will pass on to the development of production which should reasonably be a direct sequence. But in this connection a reservation must be made. Agriculture cannot — as can several other fields of production — adapt its volume of production according to whether it is profitable or not, as it is planned all too long ahead: the sequence of crops, the number of animals, etc. cannot be varied from day to day or from year to year. A stop in production is still more impossible. The consequence is that the whole *must* be kept going, and that a decline in profitableness often finds expression in a further increase in production with the object of distributing the fixed expenses which predominate so much in agriculture on a broader basis, which in its turn has a further depressing effect on an already demoralised market.

How has the development of production turned out, however? How has the land been disposed and what yield has been obtained, what animal products have been the result of agriculture's "refining industry"? It appears from table 3 that the total acreage of fields and meadows has not changed to any material extent since the last World War. The great changes have been that the total area for grain has been *reduced* by c. 165,000 hectares between 1916—20 and 1936—40, for potatoes by c. 25,000 hectares, for fodder roots by c. 15,000 hectares and for fallow land by c. 90,000 hectares, while the area for sugar beets

Table 3. The utilization of arable and pasture land.

	1,000 hectare														
	Autumn wheat	Spring wheat	Autumn rye	Barley	Oats	Mangcorn	Total cereals	Potatoes	Sugar beet	Fodder roots	Meadow hay	Pasturage and green fodder	Fallow and unused fields	Total arable land	Total natural fields
1916—20	116	24	345	171	743	248	1,707	156	36	85	1,235	151	311	3,792	1,112
1921—25	116	27	320	166	731	268	1,692	157	38	95	1,228	137	320	3,803	923
1926—30	185	35	268	135	700	245	1,610	144	31	93	1,312	135	288	3,738	1,200
1931—35	218	66	214	109	660	245	1,546	133	45	81	1,375	182	253	3,729	1,127
1936—40	231	76	181	102	657	260	1,540	133	53	70	1,379	231	223	3,737	1,033
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
1916—20	*3.1*	*0.6*	*9.1*	*4.5*	*19.6*	*6.5*	*45.0*	*4.1*	*0.9*	*2.2*	*32.6*	*4.0*	*8.2*	*100*	
1921—25	*3.1*	*0.7*	*8.4*	*4.4*	*19.2*	*7.0*	*44.5*	*4.1*	*1.0*	*2.5*	*32.3*	*3.6*	*8.4*	*100*	
1926—30	*4.9*	*0.9*	*7.2*	*3.6*	*18.7*	*6.6*	*43.1*	*3.9*	*0.8*	*2.5*	*35.1*	*3.6*	*7.7*	*100*	
1931—35	*5.8*	*1.8*	*5.7*	*2.9*	*17.7*	*6.6*	*41.5*	*3.6*	*1.2*	*2.2*	*36.9*	*4.9*	*6.8*	*100*	
1936—40	*6.2*	*2.0*	*4.8*	*2.7*	*17.6*	*7.0*	*41.2*	*3.6*	*1.4*	*1.9*	*36.9*	*6.2*	*6.0*	*100*	

has *increased* by c. 15,000 and for hay and pasture with no less than c. 225,000, all during the same comparison periods. The crops have also been more abundant. The total harvest from fields and meadows during the years 1918—19 was on an average 6,753 mill. harvest units, during the years 1938—39 the figure had risen to 9,708 and during the years 1942—43 it was 8,242. In consequence this can have only been done by raising larger crops on the same areas of cultivation. In 1916—20, 14.5 decitons of grain were harvested per hectare, in 1936—40 the crop per hectare had risen to 19.7 decitons. During the same period the potato crop per hectare increased from 115 to 145, of sugar beet from 252 to 361 and of meadow hay from 29 to 34 decitons. To illustrate the increase in the live-stock it may also be pointed out that, during the period 1918—40, the number of cattle increased from 2.58 to 2.89 mill., i. e. by 12 %, the number of fowls from 4.77 to 8.16 mill., i. e. by 71 %, and the number of pigs more than doubled from 0.63 to 1.31 mill. The annual milk production has been estimated to amount to 3.32 mill. tons in the years 1911—13, 4.08 mill. tons in 1927 and. 4.42 mill. tons in the production year 1938—39. For the year 1914 the pork production was estimated at 133, and for the year 1927 and the production year 1938—39 at 141 and 146 mill. kg. respectively. The development has thus been characterized by increased crops per hectare, increased hay and pasturage acreage and greatly increased animal production.

One of the factors which contributed to this increase in productivity is the increased use of artificial fertilizers and oil-cake fodders. Thus during the period 1920—39 the annual consumption of nitrogenous artificial fertilizers rose from 10,600 to 43,700 tons of pure nitrogen, and the annual consumption of phosphoric artificial fertilizers from 32,900 to 61,500 tons of pure phosphoric acid, calculated as phosphoric pentoxide (P_2O_5). For artificial fertilizers with potash content, calculated as potash oxide (K_2O), the consumption during the same period increased from 16,800 to 33,900 tons per annum. The consumption of oil-cake fodder, which amounted to 84,900 tons in 1920, had risen to 247,300 tons in 1939.

By way of summary it may be said that *our food requirements were covered, as regards the products of Swedish agriculture* (including exported Swedish agricultural products), *up to c. 87 % at the beginning of the earlier World War and c. 94 % in 1939*. The increased degree of self-support is set into stronger relief if it is viewed against the background of the fact that during the same period the population had increased by 15 %.

Wages.

At the same time as the total population increased, however, a considerable decrease in the agricultural population took place — "the flight from the land". This development is clearly illustrated by the following figures taken from the official statistics.

Year.	Agriculture and subsidiary activities.	Total population.
1910	2,319,000	5,522,000
1920	2,267,000	5,904,000
1930	2,135,000	6,142,000
1940	1,848,000	6,371,000

It may also be mentioned that the number of people engaged in agricultural work declined from 0.99 mill. in 1910 to 0.72 mill. in 1940 (see table 2).

As has been mentioned earlier, the economic results achieved have been accomplished and must be accomplished by adjustment of the wages (= remuneration for his own work for the great majority of our c. 420,000 agriculturalists, who are often the only, and in general the chief source of labour on the respective farms, and wages for

Table 4. The number of domestic animals in Sweden 1918—1943. (In thousands.)

Year	Horses	Cows	Total no. of cattle	Sheep	Pigs	Fowls
1918	715	1,635	2,584	1,409	634	4,775
1927	628	1,865	2,898	806	1,369	6,790
1932	612	1,925	2,920	468	1,495	8,219
1937	633	1,921	2,986	353	1,425	8,109
1940	617	1,868	2,889	329	1,315	8,165
1941	612	1,788	2,757	403	1,001	8,215
1942	591	1,650	2,546	435	845	5,833
1943	594	1,704	2,790	520	989	5,478

members of the family and employees). Before that the production must be made effective and possible savings in working costs utilized. The income level of the wage-earners may be considered representative of the majority of Swedish farmers.

The gap which has gradually arisen and been maintained between the wage level in agriculture and that in industry and other occupations, is illustrated by the following data (actual, not recalculated wages for male workers).

	Workers in industry etc.		Agricultural workers.	
		Index.		Index
1913	1,241	*100*	710	*100*
1939	3,183	*257*	1,581	*219*
1942	3,982	*321*	2,173	*301*

Rationalization Measures.

Since the last World War, agriculture has developed and improved its resources, and as a result has been able — not to catch up with the others "lead" — but certainly to improve conditions for farmers. The rationalization which has been effected refers to the majority of the production factors.

The *soil* has been steadily improved: by means of ditching, clearing away stones, liming and supplying artificial fertilizers, and by better methods.

The use of mechanical appliances has been extended, particularly in the form of increased utilization of electric power for different purposes, and the use of *tractors* and other labour-saving machines.

The *houses,* the dwelling-houses and the farm buildings, have certainly been improved also, but with the values here in question — the value of the buildings alone corresponds on an average to the selling value of Swedish land — it is unavoidable that much which *ought* to be done *could* not be done. The problem of buildings costs is one of the most difficult for agriculture.

The live-stock has been improved and also the feeding technique. Thus the yield in kg of milk per cow and year in controlled herds was 2.157 in 1917—18 (year of crisis), 3,120 in 1920—21 and 3,616 in 1937—38. In the year of crisis and bad harvest, 1941—42, the figure was 3,241 i. e. c. 1,100 kg more than in 1917—18.

The increase in crops per hectare has been considerably promoted by *scientific improvements in the seed* and by increased measures against plant diseases. Finally, the general level of skill has been greatly raised, thanks to educational institutions, courses and consultative activities, apart from the primary factor: the farmer's own efforts and progressive spirit.

An improvement or rationalization measure, which cannot be passed by in silence in a survey of this kind, is the *movement for economic associations within agriculture.* Farming is and will remain — let us hope — one of the occupations of the many. Apart from the economic side of the question, established conditions, population-political desiderata, and the values of the farming profession argue in favour of it. The object of the movement for economic associations is to eliminate the drawbacks of this great individualization, especially in the matter of sales and purchases. The central organs of this movement are the economic national organizations and the Central Federation of Agriculture founded by them. During the 10-year period 1934—43 the development of the Federation of Agriculture has made great strides. The number of members in the organizations connected with the association, which in 1934 amounted to 364,500, had increased in 1939 to 674,200, i. e. by 85 %, and in 1943 to 878,000, or by 141 %. In 1934 among the members the physical persons were c. 120,000 and in 1943 c. 340,000, thus showing an increase of 183 %. Further, during the period 1935—43 the turnover in the six largest associated organizations increased in value from 509.7 to 1,466.2 mill. kr., i. e. it was nearly trebled. It is our opinion that the organizations in questions have actively contributed to the general progress in the sphere of agriculture, chiefly by rendering possible a utilization of the conditions created by the State.

The Regulation of Prices during the War.

Since 1939, in contradistinction to the preceding periods, agricultural prices have been regulated by the State in a restrictive direction. This regulation

has been effected on the basis of the income and expenditure index worked out by the Federation of Agriculture in cooperation with the State Food Commission, and the guiding principle in fixing prices has been that agriculture should be given compensation for increases in costs arising since the outbreak of war. Control calculations made subsequently have shown that prices regulated on the basis of prognoses for production and expenses year by year have tallied so well, that for the year 1939—40 there was an excess profit of 14.6 mill. kr., in 1940—41 a profit of 6.7 mill. kr. and in 1941—42 a loss of 97.9 mill. kr., in 1942—43 a profit of 11.8 mill. kr. and in 1943—44 a profit of 112.4 mill. kr. (figure not finally adjusted), or for the whole period a total of 47.6 mill. kr. over and above the amount necessary to cover the increase in expenses. It is unlikely that one could get closer to the object in view, when it is borne in mind that the annual budget is c. 2 milliard kr.

Future Prospects.

The development which has thus been sketched inspires good hopes for the future, on the assumption that agriculture receives the protection without which it is not likely to be able to develop with intensive forms of working or to attain the standard of income which can slow up the flow from rural to urban occupations. If agriculture does not pay and there is a shortage of labour, the alternative is an exaggerated extensification and Sweden will not be able to support herself in times of unrest out in the world.

None of the measures for improvement which have been considered necessary, and which have been estimated approximately to entail a total cost of 5 milliard kronor over a 25-year period, can alone revolutionize the production conditions within agriculture, but all together and in combination with what science and technique will gradually have to offer in the future, there is no doubt that even in our northern latitudes agriculture *properly managed and properly supported* has a future before it. Already now the State-controlled level of agricultural prices is influenced by the fact that a decrease of 1 % per annum in employment (as a result of the proceeding rationalization) is taken for granted, that is to say, under unchanged conditions for the rest, the annual incomes will decline by an amount corresponding to 1 % of the costs of labour. As the labour costs correspond approximately to half the total income from agriculture, this basis of calculation implies that the prices of products could be reduced by about $^1/_2$ % annually, provided that all the elements of cost, with the exception of labour, are stationary. A satisfactory yield or level of compensation for work would render possible a hitherto unsuspected effectivization of our agricultural production to the benefit of our national security and, in the long run, to the advantage of the whole of our national economy.

SWEDISH TRANSOCEANIC LINER SHIPPING AFTER THE WAR

BY DAN-AXEL BROSTRÖM,
MANAGING DIRECTOR, AB. SVENSKA OSTASIATISKA KOMPANIET

In the midst of a raging world war Sweden has had the inestimable advantage of being able to plan in comparative security for a coming period of peace. Not least has our export industry in a praiseworthy manner exhibited in word and deed its desire to try to recover, and if possible extend, the markets which have been temporarily lost during the war. It has also been observed that importers have taken active measures to renew contacts with the Swedish market in the hope that the world trade-routes will soon be open to our country again. Swedish shipping, which aims at playing an essential and mediatory rôle in this coming exchange of commodities, has naturally sought to be prepared for it, in spite of all difficulties. The readers of this periodical will therefore probably be interested in an account of the position of Swedish transoceanic liner shipping at the present time, against the background of conditions twenty-five years ago and subsequent development.

It has often been pointed out that Swedish liner shipping had never been more effectively equipped than at the outbreak of the present war. The network of routes had been built up and covered practically all the regions of the globe which were of importance for our overseas trade. The shipping lines' own offices and their agent organisations had been extended and improved, and together with the head office afforded increasingly valuable advice and help to Swedish foreign trade. All-the-year-round sailing lists giving regular fixed days of departure and arrival had been drawn up, and finally the tonnage was of such a quality that it was more than well able to compete with the best that foreign shipping lines could offer. It must not be forgotten that the age of Swedish overseas liner shipping is not particulary great — forty years. In the struggle with foreign competitors, and that during difficult years, it had taken time to raise it to the position it occupied at the outbreak of war. It can therefore be said that not before 1939 had it blossomed out into its modern and effective structure.

Not the least contribution to this state of things was made by our Swedish shipbuilding yards. During the last World War, when the lines were still relatively new, the tonnage consisted for the most part of steamships bought from abroad, or vessels recently built in foreign — in the first place English — shipyards, and in many cases these were of a construction suitable for the time. It was during the last World War that our shipbuilding trade had its first chance to contribute actively to building up the Swedish transoceanic liner tonnage, but resources were still somewhat limited, and the result up to and including the year 1919 was six vessels of 51,510 tons dead-weight. The annual production capacity of the yards on slips for vessels of 5,000 tons d. w. and over may be estimated at 105,000 tons d. w. During the same period 12 vessels of 84,405 tons d. w. were built abroad on Swedish account, chiefly in Denmark, and the total additional new vessels were thus eighteen of 135,915 tons d. w. At the end of the year 1919 a further thirteen such vessels were ordered, representing 117,650 tons d. w. At the turn of the year 1919—1920 the whole Swedish liner fleet comprised fifty vessels of a total of 340,515 tons d. w., or including ships under construction sixty-five vessels of a total of

458,165 tons d. w. At that time the price per ton d. w. for a steam-driven liner of 9,000 tons d. w. with a speed of 11 knots would probably have been approximately 670 kr.

It was during this period also that the change-over from steam-driven to Diesel-driven vessels began, which was of the greatest importance for the whole future development of the liner fleet. As early as in 1912 Rederi AB. Nordstjernan put in its first motor-driven vessel on its line to South America, and the first Swedish-built motor liner was delivered in 1918 from the Götaverken to the Transatlantic Company. Since 1922 not a single steam-driven vessel has been delivered to Swedish shipping companies, and this development has certainly contributed to the competitive strength of the liner fleet. During the period between the wars, and particularly during the latter half of the 1930's, development proceeded rapidly. New motor constructions were produced, and the speed was increased successively up to 15—16 knots or more, the welding of whole vessels or parts of vessels was introduced, loading and discharging facilities were improved, the number of winches and deck cranes was increased, cold-storage rooms and freezing chambers were installed where it was suitable, ventilation arrangements of more modern types began to be employed, and the quarters for the officers and crew were considerably improved, while at the same time the appearance of the vessels themselves was changed by modern "streamlining". At the outbreak of war in 1939 the Swedish liner fleet comprised seventy-five vessels of a total of 567,470 tons d. w.

The serious consequences of the second World War for the whole mercantile marine, not least for its liner fleet, are all too well known to call for notice here. Shipping losses assumed ever increasingly disastrous proportions, and the problem of replacing them became urgent at an early stage. Here, for the second time within a quarter of a century, the Swedish shipyards were faced by the great task of trying to maintain the size and efficiency of the Swedish mercantile marine in spite of all difficulties. Orders for new ships soon poured in from Swedish shipowners, while at the same time considerable work for the Navy had to be given priority, and difficulties in obtaining materials became increasingly great. It is appropriate here to extend a meed of praise to the Swedish shipyards for the way in which they have hitherto met the calls upon them.

Up to the end of July 1944, twenty-seven liner vessels of 212,260 tons d. w. had been completed since the outbreak of war, as against the loss of thirty-one vessels of 235,761 tons d. w. and the sale of eight vessels of 58,000 tons d. w. The orders in hand comprised thirty vessels of 230,100 tons d. w. It emerges from this that the liner tonnage, excluding vessels on order, has increased by 38 % since the year 1919, but decreased by 17 % in comparison with the tonnage in existence when the war broke out in 1939. Including vessels under construction, the increase is 53 % in comparison with the year 1919, and 24 % in comparison with the year 1939. In reality, however, this increase is somewhat fictitious, as a number of older vessels are included in the existing tonnage which normally should have been disposed of as obsolete during the past five war years, and which have only been kept in service owing to the war. When conditions are changed in the future, these vessels will soon be discarded by the liner fleet.

Naturally, with increased speeds and other modernisations, the *transport capacity* has increased more than would appear from a comparison between the tonnage figures. If the increase in speed only is taken into consideration, a mathematical expression for it can be obtained by multiplying the distance in nautical miles per 24 hours which the vessel can cover at full speed by the total d. w. tonnage, or — which will probably be more significant for liner vessels — by the cargo space in cubic feet/bale. For the former the figures on $^1/_9$, 1939, and $^1/_8$, 1944, are 220.6 mill. and 244.3 mill. respectively, and for the latter 11,585 mill. and 13,216 mill. respectively. It should be observed that the difference between the latter figures is percentually greater, which clearly indicates the present development towards ships with greater cargo space.

For a liner vessel of e. g. 7,000 tons d. w. and

a speed of 16 knots the price per ton d. w. could be approximately estimated at 440 kr. at the outbreak of war. The price has since risen to about 700 kr. As a result of this increase the compensation for older vessels lost could not nearly cover the prices the shipping companies have had to pay for their new vessels. In consequence the realization of a program of practically complete replacement has compelled the shipping companies to utilize the resources which ought otherwise sooner or later to have been largely employed for a steady and natural *expansion* of existing tonnage. In this connection it should be noticed, however, that the continuous modernisation of the fleet by replacements has been speeded up considerably, and, as was mentioned above, its transport capacity has thereby been increased. The fact is remarkable, however, and of no small importance for future developments.

The first World War is all too recent for the hard-won experience then gained in the matter of ordering new tonnage to be neglected during the present war. Conditions were different in many points however. The high freights then ruling during certain periods have not been obtainable this time. The present rises in freights have been motivated by the increased costs of propulsion and expenses in ports, and the freights have been fixed in collaboration between the shipping companies and the State authorities. Consequently, the exceptional profits made in the last war have been absent this time, receipts have been more normal, and the large item on the revenue side has in many cases been the compensation for lost tonnage. A policy of consolidation has governed the disposal of the available assets, and on the whole dividends have remained at the pre-war level.

For most people it was probably a surprise that Swedish shipping should have emerged from war-time conditions of 1914—1920 in the unsatisfactory state it did. The sea-going Swedish commercial tonnage — which during normal times should be increased by at least 2 % every year — was no larger at the end of 1920 than at the outbreak of war, or about 1,500,000 tons d. w. It then had to show a yield on a renewals capital of c. 480 mill. kr. as against 125 mill. kr. in 1914, i. e. 320 kr. per ton d. w. as against 80 kr. per ton d. w. before the war. Strangely enough the transoceanic liner tonnage — in spite of necessary purchases of compensation tonnage and new orders at high prices — was booked lower than other tonnage, i. e. at about 200 kr. per ton d. w. excluding new vessels, and c. 250 kr. per ton d. w. including new vessels, which can be partly explained by the fact that this liner tonnage was composed of larger vessels, the price per ton d. w. falling with the increase in the tonnage per vessel. Even this booked value was all too high, however, for a reasonable yield and amortization. For that reason, with the exception of several particularly good years, the period between the wars was none too good from the shareholder's point of view.

Taxation policy during the first World War and the period immediately following it was largely to blame for the fact that Swedish shipping was placed in such an unfavourable position, when it was a question of maintaining itself in international competition, in spite of inflation and the unfavourable high exchange rate of the krona. The taxation authorities in Sweden had long applied the rules for writings-off on vessels in such a way that the shipping companies were only allowed annual tax-free writings-off in proportion to the vessel's wear and tear under *normal* conditions. These writings-off were in general fixed at 5 % of the purchase value of the vessel, since a vessel is usually considered to be serviceable for its purpose for 20 years. Although the World War completely changed conditions in this respect, our taxation authorities were so bound by precedent that they forgot the purpose of writings-off and insisted on an unchanged application of the taxation rules. Not until after the Swedish Shipowners' Association and private shipowners had made far-reaching investigations during the years 1919—1921 and had made repeated representations to the Government and taxation authorities, was attention paid to the claim that taxation should pay more consideration to the necessity of writing down vessels to their scrap value at

the end of the presumptive period of service, and that writings-off on vessels, and in particular on such with too high purchase values, must thus be *above* 5 % of the purchase value as soon as the presumptive remaining period of service was less than 20 years from the date of acquisition. It took a long time, however, before this basis of taxation became generally known and accepted throughout the country.

From and including the fiscal year 1938, however, the shipping companies have been permitted free writings-off on vessels. As has been pointed out above, the transoceanic liner shipping has not employed its resources for large dividends since then but rather devoted them to the consolidation of its position. The net booked value of liner tonnage had therefore been reduced on 31 December 1943 to 40 kr. per ton d. w., excluding vessels under construction, and 122 kr. per ton d. w. including vessels under construction. The great losses which transoceanic liner shipping has suffered and is still suffering during the present World War, however, render necessary further new constructions at considerably increased prices. Such price increases must be immediately written off as a sound business precaution. This has not been fully understood in taxation circles. It is to be hoped that the open-mindedness which underlay the legislation as to free writings-off will be in evidence again when the reductions for increased prices are dealt with in the higher instance. To a large extent the future competitive strength of Swedish transoceanic shipping depends on this.

But naturally it is not sufficient that it is possible to procure good vessels, that the shipping companies are so well consolidated as to be in a position to withstand severe shocks in the future, that the management is effective and profitable to the customers; it is also of the greatest importance that the ships should be manned by people who can handle well the valuable instruments entrusted to them, and who can represent their country and their company out in the world. Swedish seamen have always had the name of being capable exponents of their profession, and even if certain dissensions have sometimes been given prominence in the daily press, a warning must be uttered against allowing such passing episodes to obscure essential achievements accomplished, not least during this war. As has been pointed out above, since the first World War considerable improvements have been made in the accommodation for the officers and crew, an 8-hours day at sea has been introduced for both engine-room staff and deck hands, and recently also the pensions conditions for seamen have been better ordered, and their pension benefits increased. Vocational training for seamen is a desideratum, and the question awaits a speedy solution, not least in view of the fact that they are entrusted with valuable and complicated vessels. With regard to the officers, emphasis must be laid here on the serious problem which has arisen owing to the increasingly pronounced shortage of qualified men, in the first place in the engine-room. The private initiative which has been taken in certain quarters to improve conditions, has of course been insufficient to provide an all-round solution of the problem, and therefore great satisfaction must greet the renewed measures now being taken in Government quarters with the object of providing increased training possibilities on vessels especially intended for those who wish to make their careers as officers in our mercantile marine.

The far-reaching changes in the world's merchant services caused by the war are exemplified in the first place by the enormous production in U. S. A. of standardized merchant vessels, principally of the two types "Liberty" and "Victory", the result of which will be that U. S. A. will own the largest mercantile marine in the world at the end of the war. It has been pointed out that these vessels are simple in construction, their running expenses are high, their size not suitable for a number of markets, and their speed — at least in the case of the "Liberty" ships — low, and finally, the building costs fairly high (for a "Victory" ship c. $ 247 per ton d. w., for a "Liberty" ship c. $ 167 to 180 per ton d. w.), but that will probably not prevent the greater number of these vessels still being in commission after the war, not only in the merchant service of the U. S. A. but also in the

mercantile marines of the other allied nations. It is of course impossible to predict the exact effect this will have on world shipping in the future, but it will be certain that if this tonnage is placed at the disposal of the markets of the world, not only to serve certain natural transport requirements, but also to be used for securing to the U. S. A. a dominating position on the oceans of the world, international shipping will be subjected to severe stresses.

Another post-war problem is the extent to which our liner tonnage will be engaged in relief activities for the European countries devastated by the war. As is well known, during a succession of years a considerable amount of liner tonnage has been engaged in Red Cross work, mainly for Greece. This in itself has shown the willingness of Swedish shipping to take active measures to help suffering peoples, in spite of the great risks. We Swedes and our shipping must naturally take up a sympathetic attitude towards the enormous need of help which will exist after the conclusion of the war in Europe — not least in our neighbouring countries in the North — but we must see to it then that our available resources are properly disposed, so that our own vital interests and requirements are not neglected. In the case of the liner fleet it is necessary that, as soon as feasible, it should be put in service again, to the greatest possible extent on its previous routes.

This survey should not be concluded without a few words on the importance of air traffic. The enormous development and the range which flying has achieved during the war, will lead to numerous changes in post-war transport conditions. This will be most noticeable in the matter of the transport of passengers and post, but it will probably not be long before considerable quantities of goods, in the first place light and valuable articles, will be carried by air. The competition that shipping will encounter will naturally affect the liner companies in the first place, but it is probably not unreasonable to claim that the aeroplane will intensify world intercommunication, and in that way stimulate an increased exchange of commodities, which will also benefit the shipping industry. It has been said that these means of transport will supplement each other, but the full effect of this will not be felt until a more intimate co-operation between the different parties is achieved, so that common experiences and resources can be best utilized. This idea of co-operation has evidenced itself within all the great shipping nations, and illustrative of this is a pronouncement recently made by a prominent American shipping man, Albert V. Moore, in connection with the application of the shipping firm which he manages for flying concessions to both South America and Scandinavia. Mr Moore said: "But it is through the employment of ships and aeroplanes on the basis of combined time-tables that we expect the most far-reaching development. In our view such co-operation is the only effective method by which a complete, effective and modern transport service can be afforded under the conditions which will prevail after the war. Reports from other nations indicate that this is the guiding line of thought in their post-war planning. If American companies cannot enjoy the same rights as their foreign competitors, they will work under extremely unfavourable and probably disastrous conditions". It is necessary for the Swedish liner shipping companies also carefully to follow developments both abroad and at home, so that they may not be in a less advantageous position than their competitors. For example, it will probably prove particularly appropriate for future Swedish air traffic to make use of the world-wide organisation, with their own offices and agents, which the liner shipping companies have established for their own use, and which has in the course of years acquired a great knowledge of our trade with different countries.

Thus, in spite of all the difficulties which may be encountered by Swedish transoceanic liner shipping during the coming years of uncertainty, there is reason to hope that, with the present preparations for peace, this branch of shipping may be able to maintain its position as the most important link in our commercial connections across the oceans. During the war the people of Sweden have learnt to understand what an important part our shipping plays for the prosperity

of the country. For those who work in the industry it is of pressing importance — and every effort should be strained to that end — to preserve the goodwill which has been gained. On the other hand, the hope must be expressed that the support of exporters and importers, which is a precondition for the maintenance and development of our Swedish shipping, will continue to be forthcoming. On the assumption that the ports which are served by liner shipping are managed effectively and on modern lines, and that the local connections with them are rationally organized, the Swedish transoceanic liner shipping should be able during the coming years of peace to offer its customers competitive service in the matter of transport between our country and countries beyond the great oceans.

CELLULOSE AS A BASIC MATERIAL FOR CHEMICAL INDUSTRIES

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The products which are nowadays being made by the chemical conversion of cellulose are of many different kinds and serve a great variety of uses. As examples, mention may be made of the textile materials artificial silk and staple fibre, the plastics celluloid, cellon and cellite, the explosive gun-cotton, cellulose lacquers and cellulose glue. As the chemical industries based on cellulose have played an increasingly important part both as makers of various essential goods and as consumers of cellulose, including considerable quantities from this country, it may be of interest to give a brief account of the raw materials, methods, distribution and future prospects of this industry.

The Occurrence and Properties of Cellulose.

Cellulose occurs in nature as a fibrous substance in the great majority of the more highly developed plants. It is so closely associated with other constituents of these plants that it can be freed from them only with difficulty, whence cellulose materials used for technical purposes always contain rather considerable amounts of other substances. Chemically viewed, cellulose is a carbohydrate, thus consisting only of carbon, hydrogen and oxygen. The molecules form chains of varying length, built up of glucose molecules.

Cellulose as such is insoluble in all the ordinary solvents. At ordinary temperature it is also insensitive to weak acids and alkalis. Under the action of stronger acids — as also when treated with strong oxidizing agents —, the long molecules are broken down into shorter ones, the final result being the complete conversion of the cellulose into glucose. Under the actions of concentrated solutions of certain chemicals, such as zinc chloride or sulphuric acid, such a marked swelling of the cellulose takes place that one can speak of a dissolution: this property is made use of in the production of vulcanized fibre or genuine vegetable parchment.

Besides these breaking-down and swelling reactions, the most characteristic chemical property of cellulose is its capacity for reacting with certain acids so as to form esters, *e. g.* with acetic acid cellulose acetate, with nitric acid cellulose nitrate, and with alcohols ethers, as with ethyl alcohol ethyl cellulose. The executions of these reactions is a rather complicated procedure and in many cases has to be effected via several intermediate stages. The primary object of the chemical treatment of cellulose in most cases is, with the aid of the said reactions, to render it soluble in water or in organic solvents or otherwise prepare it for further treatment. After having been converted into the desired shape, the cellulose, in certain cases, is restored to its original chemical composition, *i. e.* to so-called regenerated cellulose, as for instance in the production of viscose silk. In other cases the chemical cellulose compound or "cellulose derivative" is used without further conversion, *e. g.* acetate silk, cellulose nitrate and so on.

Whilst the purity of the cellulose fibres is of subsidiary importance for the manufacture of paper, it is obviously desirable, in all chemical treatment of cellulose as a raw material, to use it in as pure a form as possible. The selection of the raw material is determined also by other factors, such as suitable physical and chemical properties in other respects, prices etc. A chemical analysis of a cellulose quality does not indeed tell us all about its properties, but never-

theless serves as a basis for judging its suitability. An indication of the content of pure cellulose is the so-called alphacellulose percentage, *i. e.*, that part of the material which, under certain determined conditions, is insoluble in 18 % caustic soda solution. In addition, cellulose for technical purposes contains mainly certain similar carbohydrates, the so-called hemicellulose. Certain of these substances in many cases react similarly as cellulose proper, and may thus be of value, whereas some of them consist of so-called pentosans, which must be regarded as a non-desirable constituent. All hemicellulose is more sensitive to chemical action and more soluble in alkali than the cellulose itself, a fact which is utilized in the production of purified cellulose material. Other impurities in technical cellulose are lignin — the last remnants of which, however, are rather easily eliminated by the bleaching process and are therefore practically absent in bleached pulp —, resin and fat (which are analytically determined by extraction with organic solvents, such as alcohol) as well as mineral constituents, designated in the analysis as ash.

Production of Cellulose from Different Raw Materials.

Among the purest cellulose materials occurring in nature, are the fibres of cotton. Besides the long fibres, the cotton crop yields also short seed-hairs, "linters", which have the same chemical composition as cotton proper, but which, owing to their inadequate length, are not usable as spinning material. For chemical industries based on cellulose, however, linters have become a very valuable raw material. After a rather simple purification process, consisting in cleansing, boiling in alkali and bleaching, linters constitute a material consisting as to nearly 100 per cent of pure cellulose, and thus containing merely minute amounts of foreign impurities. This is shown by the subjoined table, which gives some typical analyses of cotton linters.

At quite an early stage, however, it was realized that for certain applications, such a pure and relatively expensive raw material as linters was by no means essential, but that bleached

Table 1. Analyses of cotton linters.

	Raw linters		Bleached linters		
Alpha cellulose . %	96.0	99.1	98.9	99.3	98.6
Pentosans . . . . %	1.2	0.7	0.5	0.4	0.7
Resin and fat (alcohol extract) . %	1.1	0.3	0.12	0.11	0.08
Ash . . . . . %	1.3	0.2	0.11	0.05	0.07

sulphite cellulose, similar to that used for the manufacture of paper, could be employed instead. This was especially the case in the manufacture of artificial silk etc. according to the viscose process, which soon became the principal consumer of cellulose for chemical purposes. Also for more exacting requirements, it gradually became possible to use cellulose of wood, after certain cellulose mills had managed to produce it in such high degrees of purity that in some cases it could compete with the best kinds of linters.

Spruce and pine wood contains cellulose as to about 42 %, the remainder consisting mainly of hemicellulose and lignin. By the sulphite or sulphate process, the major part of the last-mentioned constituents are dissolved, and the fibres are freed from one another. By the subsequent bleaching with chlorine and hypochlorite of lime, the residual lignin is dissolved and certain colouring matter is destroyed, the grayish or brown colour of the unbleached pulp thus being converted into white. The bleached pulp will consist of about 85—90 per cent. of cellulose, the rest being hemicellulose, together with small amounts of resin, ash etc. By after-treatment, usually with alkali, in connection with the bleaching, the residual hemicellulose etc. can be removed to a greater or lesser extent. If this refinement is carried so far that the pulp contains over 93 % alpha-cellulose, it is graded as "refined cellulose". There are now several qualities of such cellulose, suited for different applications. The requirements made in regard to the qualities of refined cellulose are often so special that the production thereof necessitates close co-operation between maker and consumer; the varieties are therefore nearly as numerous as the number of byers. For certain purposes the pulp cannot be used in the usual form of

sheets, but must be delivered as crêpe paper or disintegrated.

The development of the methods of production and purification for wood cellulose with the main object of producing a high-class chemical raw material may be said to have originated from the time when bleached sulphite pulp began to be used for the production of viscose silk, namely on a small scale about the end of the last century. Ordinary unbleached paper-pulp of certain qualities was used which had been found suitable from the outset; but as at that time people possessed a very limited knowledge of the processes, they were unwilling to embark on any experiments in regard to the quality of the pulp. The makers of silk pulp had to run their mills in exactly the same way year after year, refusing to make the least change, either in methods or machinery, which might conceivably affect the properties of the pulp.

Uniformity in quality is still regarded as one of the principal essentials in a good pulp for the viscose process. Under the pressure of competition between the makers of viscose pulp, this requirement, during the last few pre-war years, had been carried to extremes. Not only must the average analyses in every shipped consignment be almost exactly alike, but the variations in the pulp between the individual bales, *e. g.* as regards moisture percentage, must be within very narrow limits. In many cases the buyers make such exacting demands in this respect that they cause considerable difficulties for the makers, who cannot always recoup themselves by a corresponding increase in price for the additional costs thus entailed.

According as more thorough knowledge regarding the chemistry of the viscose processes was acquired, the makers of artificial silk showed greater inclination to try new methods and raw materials. The cellulose brands which became available in the nineteen-thirties gave a higher yield and a better quality of silk, besides involving certain advantages in manufacturing technique. This improvement in the quality of the silk pulp — or, as it is now called, viscose pulp — is largely due to the introduction of more efficient methods of bleaching and boiling, thanks to which it is now possible, at the most modern sulphite mills, to produce a pulp with almost any desired analysis figures whatever, within rather wide limits. By way of example, some analyses of viscose cellulose (1) of earlier date and (2) of the most modern type are given in Table 2, section I.

Table 2. Some analyses of viscose cellulose of different kinds.

	I			II	III	
	Of spruce acc. to sulphite process			Of beech acc. to sulphite process	Of pine acc. to sulphate process	
	Viscose pulp from year 1924	Viscose pulp of year 1944				
		Normal qual.	Super qual.		Normal	Pre-hydrolyzed
Alpha-cellulose . . . %	87.0	89.0	91.0	89.0	88.0	94.5
Pentosans . %	3.3	2.7	2.7	6.0	6.0	3.0
Resin and fat %	0.85	0.60	0.30	0.30	0.05	0.03
Ash . . . . %	0.22	0.09	0.09	0.17	0.15	0.10

An important difference between the earlier and the more modern qualities, which is not shown in the table, lies in the degree of whiteness. The modern viscose pulps, especially the so-called super qualities, treated with weak alkali, are almost entirely free from remnants of lignin etc., and therefore have a high degree of whiteness, yielding a silk which in most cases need not be bleached.

The Scandinavian spruce had been considered from the outset as the best raw material for viscose pulp. This is doubtless still the case, though certain North American species, especially the Western Hemlock, which in recent times has been utilized on a large scale, also yield a first-rate pulp, which, without being subjected to any appreciable alkali treatment, almost equals even the "super quality" in Table 2. Together with a few other kinds of wood, it is the raw material for the largest and most modern American silk pulp mills, situated on the northern West Coast. The older mills in eastern North America use woods similar to the Swedish spruce.

In those countries which lack large supplies of the above-mentioned high-grade raw materials

for silk pulp, and where endeavours have been made to become self-supporting also in this respect, recourse has been had to other basic materials. Such endeavours have been particularly intense in Germany, Italy and Japan, which before the war, together with the United States, were also the largest consumers of silk pulp. In Germany beechwood became the chief domestic material and it was soon found that a fairly good cellulose could be made from it, even if it did not come up to the high quality of the Scandinavian pulps. A drawback was the high content of pentosans, which is characteristic of deciduous wood. Viscose pulp of beech is now being made in considerable quantities in Germany. A typical analysis is given in Table 2, section II. On the other hand, the frequently mentioned attempts to produce cellulose from potato tops have not yet yielded any practical results. In Italy, a poorly forested country, the artificial silk company Snia Viscosa has erected a magnificent plant for the production of silk pulp from a kind of giant reed, Arundo donax, which was planted on waste marshy ground at the north end of the Adriatic. In order that this raw material, which contains a large amount of silicic acid, may yield a serviceable product, the cellulose made according to the sulphite process must be subjected to strong alkali treatment which considerably increases the expense of the process. However, a quite serviceable viscose pulp with good analysis figures has been obtained in this way. In Japan somewhat similar methods have been tried, attempts being made to utilize the available domestic raw products, such as the soya plant in Manchuria and Korea. At present the Japanese rayon and staple fibre industry is entirely based on domestic raw materials, though apparently they leave much to be desired in regard to quality.

Certain properties which vitally affect the serviceability of a viscose pulp are not shown at all in the analysis, or merely in a minor degree. It is, for example, of the greatest practical importance that the solution obtained, *i. e.* the viscose, can be filtered without clogging up the filter cloths too rapidly. In unfavourable cases the viscose may contain a large amount of incompletely dissolved fibrous remnants, which rapidly block up the filters. This, for example, is the case in the use of ordinary bleached sulphate cellulose, which has hitherto prevented it from being employed in the ordinary viscose process. In the course of the last few years it has, however, been found possible by dint of certain changes in the production of viscose, to obtain a satisfactory filtering. Moreover, by introducing a treatment of the wood with weak acid (so-called prehydrolysis) — according to the methods of the German staple fibre concern Phrix —, before the sulphate boiling, it is possible to obtain a pulp with good filtering qualities. With the aid of pre-hydrolysis, successful attempts have even been made to produce a serviceable viscose cellulose from straw.

Analyses of two viscose pulps made from pine according to the sulphate process are given in Table 2, section III. Though the quality of the finished silk in regard to strength and durability is not as a rule greatly dependent on the kind of pulp employed, it has been found that pre-hydrolyzed sulphate pulp yields distinctly better results than sulphite pulp.

An improvement in viscose pulp in the direction of greater chemical purity is represented by the above-mentioned so-called refined celluloses. Merely a few makers of cellulose, however, have taken up the production of these types of pulp. For this purpose special machinery is required, besides great experience, acquired in the course of many years' cooperation with the consumers, in conjunction with research work. Developments in this field may be said to have started in the United States about 15 years ago, when Brovn Co., as the result of extensive researches, started production of several highly refined qualities of sulphite and sulphate pulp, which have been used chiefly for special kinds of paper, but also for chemical elaboration. In connection with the introduction of the modern bleaching methods for cellulose and the improvement of viscose pulp, the production of refined cellulose was afterwards taken up at several other mills. In Germany much research work was devoted to this matter, with good results. In Sweden the production of refined cel-

lulose was first taken up by Uddeholms AB at the beginning of the nineteen-thirties and afterwards by other companies.

Some analyses of European refined celluloses of the present day are given in the subjoined Table 3. They indicate how far we have now got in regard to the production, on a commercial scale, of a pure cellulose from wood.

Table 3. Examples of some European grades of refined cellulose.

No.	1.	2.	3.	4.	5.
Raw material	spruce	spruce	pine	beech	beech
Cooking method	sulphite	sulphite	sulphate	nitric acid	sulphite
Alpha-cellulose . . %	94.5	98.0	96.0	97.7	94.5
Pentosans . . . . %	2.5	0.8	2.4	1.6	2.3
Resin and fat . . %	0.08	0.09	0.05	0.15	0.17
Ash . . . . . %	0.07	0.04	0.08	0.11	0.15

If we compare the analysis of the Swedish refined sulphite cellulose No. 2 in the above Table 3 with the analyses for linters in Table 1, it will be found that they show but little difference. Why in certain cases linters are still used whilst in other cases refined cellulose has been adopted instead, is due chiefly to factors which cannot be read from the analysis. An incontestable advantage in linters is the ease and uniformity with which this material in most cases reacts, a property which enables us, for example in acetylation, easily to obtain products which give quite clear acetone solutions and films. The merits of refined cellulose, on the other hand, are that it can be delivered in very uniform quality, that it is practically free from mechanical impurities, and that it is usually supplied at a considerably lower price.

An account will now be given of how the different kinds of cellulose are employed for various chemical purposes.

Chemical Industries Based on Cellulose.

The chemical industries which use cellulose as a basis for their production may be grouped according to the principal processess by which the material is elaborated. They are the following:

1. Xanthogenation and regeneration — the viscose process.
2. Dissolution in cuprammonium and regeneration.
3. Nitration.
4. Acetylation and similar esterifications.
5. Etherificaton (methylation, ethylation, etc.).

By far the largest consumption of cellulose for chemical purposes, over one million tons per annum, occurs in the production of artificial silk, staple fibre, etc., according to the viscose method. The manufacture proceeds in the following way.

The cellulose, in the form of sheets of a fixed dimension, is first treated with 18 % caustic soda solution, *i. e.* is "mercerized", in which process so-called alkali cellulose is obtained. The latter is ground, is allowed to ripen for a certain time at a fixed temperature, and is then treated with carbon bisulphide. In this so-called sulphidation, an orange-coloured substance, cellulose xanthogenate, is formed; it is dissolved in weak caustic into a viscous yellow solution, viscose. After filtration and ripening, the viscose is spun, *i. e.* is forced out through nozzles with extremely fine holes in a coagulation bath consisting of sulphuric acid and salts, in which it immediately solidifies into threads; these threads are wound on bobins and subjected to washing, bleaching, dyeing and other after-treatment, drying, etc.

The manufacture of staple fibre proceeds in quite the same way including the spinning process, immediately after which, however, the bundle of threads is cut into short pieces, called staples and in this woolly or cotton-like form is subjected to the subsequent washing and after-treatment. The production of staple fibre is thus a much simpler and cheaper process than the manufacture of artificial silk. In making cellophan sheets, the viscose is forced out through a narrow slit instead of through nozzles. By allowing the viscose to coagulate under other conditions, sausage skins, capsules, bristle, sponges etc. can be made from cellulose regenerated in the above-mentioned way.

The development of the viscose industry has proceeded at an extremely rapid pace. The process was first carried out on a laboratory scale

by the English chemists Cross, Bevan and Beadle in 1891, and merely a couple of years later the first manufacture of artificial silk according to that method was started. In 1910 the world production of visccose silk was about 8,000 tons, in 1920 25,000 tons, and in 1930 200,000 tons. In 1929 the first manufacture of staple fibre commenced in Germany, and it showed a still more rapid expansion than the making of artificial silk. Thus in 1939, when the production of artificial silk amounted to 490,000 tons, no less than 520,000 tons of staple fibre were produced, besides transparent wrapping, etc. Out of the total output of viscose products, aggregating roughly to 1,100,000 tons in the last-mentioned year, Germany produced about 325,000 tons, Japan 250,000 tons, the United States 200,000 tons and Italy 150,000 tons. In the course of the present war the productive capacity, especially as regards staple fibre, has been greatly extended in different countries. Taking also into consideration that the existing capacity has not everywhere been fully utilized, the present world output of viscose products may be estimated at between 1.2 and 1.3 million tons pr annum, corresponding to a cellulose consumption of approximately 1.4 million tons. By way of comparison, it may be mentioned that the normal world production of cotton is about 7 million tons, of wool barely 2 millions tons and of natural silk merely some 50,000 tons annually.

During the years immediately preceding this war, the requirements of viscose pulp in the different consuming countries were covered, broadly speaking, in the following way. Germany attempted to make herself self-supporting as far as possible, and merely a very small import from the Scandinavian countries was permitted. Italy covered the major part of her requirements by import from Sweden. In England Scandinavian and American pulp was employed. Other European consuming countries, such as France, Holland, Belgium, Switzerland and Poland, bought their viscose pulp chiefly from Sweden, Norway and Finland. The American viscose industry procured its raw material from domestic and Canadian mills, and the import from Europe was on a very small scale. Japan bought mainly West American pulp, but also rather considerable quantities from Scandinavia.

During the war, of course, very marked changes have occurred in the above-mentioned conditions. Broadly speaking, the United States and England have been entirely depending on American and Canadian pulp, whilst the European continent has covered its requirements partly by domestic production, partly by import from the Scandinavian countries, especially Sweden. In contrast to the prewar position, Germany has come forward as a large buyer. Merely a few countries, such as Spain and at times the South American States, have been in a position to choose between American and Scandinavian pulp. The large Japanese artificial silk and staple fibre industry is entirely dependent on domestic raw products, but it seems that the factories have been largely reorganized for war production.

In Sweden the first manufacture of artificial silk was started in 1918 by AB. Svenskt Konstsilke, at Borås. In 1935—1936 the production of transparent wrapping and staple fibre commenced at Norrköping, at the plant of AB. Nordisk Silkescellulosa, controlled by the Swedish Cooperative Society. During the war (1943) AB. Cellull, Älvenäs, Grums, a company in which the textile mills and the Cooperative Society are shareholders, started production of staple fibre. In the course of years the capacity of the two earlier undertakings has been considerably extended. In addition, the manufacture of staple fibre has been taken up at Borås and the production of sausage skins and sponges at Norrköping, all according to the viscose method. All these factories, of course, work solely with Swedish cellulose and procure also all other essential raw products, such as caustic soda, carbon bisulphide and sulphuric acid, within the country. In normal times their output should, broadly speaking, cover the country's requirements, with the exception of some special qualities, and should also suffice for some export.

In the so-called copper-silk method, first indicated by Despaissis in 1890, the cellulose is dissolved in a solution of cupric hydroxide in ammonia. It is then precipitated in the form of

threads by being forced out through nozzles with fine holes in water, whilst stretching. Silk and staple fibre made by this process are best known under the name of "Bemberg" products. In some respects they are superior in quality to the viscose products, buit entail a higher cost of production. This copper-silk is manufactured in Germany, Italy, England, the United States and Japan, but not in Sweden. The requirements are very exacting in regard to the raw material, which formerly consisted solely of linters. Owing to import difficulties, however, it has been replaced in some quarters by refined cellulose; this substitution has turned out well. The world production of copper-silk apparently does not exceed 30,000 tons annually.

Cellulose nitrate is produced by treating cellulose with a mixture of nitric and sulphuric acid, followed by stabilization boiling, washing and drying. During the whole nitration process, the cellulose retains its original fibrous structure, which, however, is lost when the cellulose is afterwards gelatinized or dissolved in organic solvents. Cellulose nitrate or, as it is often called, "nitrocellulose", was the cellulose derivative first produced (Schönbein 1846); and, in the form of celluloid (1869), that is, compounded with camphor, it was also the first among the numerous plastics which are nowadays being used in manifold ways for articles of widely differing kind. In the form of gun-cotton, cellulose nitrate is still the principal propelling agent for projectiles, and in foreign countries the present production thereof for military purposes apparently amounts to several hundred thousand tons per annum. The consumption for civil purposes is also very considerable. Cellulose nitrate is relatively cheap and has several extremely valuable properties. It is also used, *inter alia*, for lacquers. It is still unsurpassed for photographic films, but has the drawback of being highly combustible. A solution of cellulose nitrate in alcohol and ether yields collodium. Cellulose nitrates of several different kinds (*e. g.* for lacquers) are being made in Sweden by AB Bofors, Nobelkrut, and for military purposes as well as for the production of dynamite also elsewhere in this country.

Formerly the raw material used everywhere for cellulose nitrate of all kinds was cotton or linters, — setting aside a period during the former war, when certain countries had to cover the vast consumption of gunpowder with ordinary bleached sulphite pulp. This material then left much to be desired. Thus the alpha-cellulose content as a rule seems to have been only 80—85 %, the percentage of resin about 1.0 % and the ash content about 0.5 %. The consequence was that the gunpowder thus produced had a bad durability and could be used only under war conditions, when it was rapidly consumed. Immediately after the war these countries in fact reverted to the use of linters.

When the modern refined celluloses were put on the market, however, the situation changed. It was found that with certain of these celluloses quite as good results could be obtained as with linters — in some respects even better. Thus even before the present war, Sweden was independent of imported cotton-cellulose for the production of gunpowder. Also for lacquers, celluloid, etc., linters have been superseded by refined cellulose, with perfectly satisfactory results.

The now belligerent countries had endeavoured for years before the war to render themselves independent of imported cellulose for the production of gunpowder. There — so far as linters are not available — refined cellulose is used for this purpose, or else, as in 1914—1918, unrefined bleached sulphite pulp, in both cases of domestic production. There is no export from Sweden to these countries of cellulose intended for the production of gunpowder.

By treating cellulose with acetic acid and acetic anhydride, etc. (so-called acetylation), cellulose acetate is obtained, a product which was first made by Schützenberger in 1865. The triacetate, or primary acetate, first yielded in this process is then converted, by a subsequent treatment with acid, into the technically more valuable secondary acetate. The latter, wich was first produced by Miles in 1903, is soluble in acetone, and was soon brought into extensive use for artificial silk, transparent wrapping, incombustible films, lacquer, safety glass and a great number of plastics. In the manufacture

of artificial silk, an acetone solution of cellulose acetate is employed; it is forced out through a nozzle with fine holes in a varm current of air, where the solvent evaporates and threads are thus formed. Acetate silk has certain advantages over viscose silk: for example, it is less affected by moisture. In the course of the last few years the primary acetate has also been brought into use for certain purposes.

Cellulose acetate is produced in considerable quantities, especially in the United States, where in 1943 the output intended solely for the production of artificial silk amounted to 74,000 tons; it is also made in Germany, England, Italy, France and several other countries. There has been a very marked increase in the output of this product during the last twenty years. Hitherto cellulose acetate has not been made in Sweden, although there are many good opportunities here for such production: all the necessary raw materials are available within the country.

The production of cellulose acetate (as well as of similar esters, such as acetobutyrate) seems to be the process which makes the greatest demands on cellulose as a raw material. In order to yield a first-rate final product, the material must not only be practically free from all foreign constituents, but must admit of easy, uniform and complete acetylation. For this purpose linters are still chiefly used; but during the last few years refined cellulose qualities (of type 2 in Table 3) have become available, which, after the readjustment of the acetylation process, yield practically as good results. The greatest difficulty has been to obtain perfectly clear solutions and films, but even this problem has been mastered.

For the production of silk the requirements in regard to clear solutions are not so exacting, and for this purpose even refined cellulose of types 1 or 5 (see Table 3) has been employed. That linters have been replaced by refined cellulose on the European Continent during the last few years is chiefly due to the commercial blockade and thus not surprising. But even the American producers of cellulose acetate, who have free access to linters, are now making extensive use of refined cellulose.

Products of later date than the above-mentioned cellulose derivatives are cellulose ethers, which may be regarded as compounds of cellulose with alcohols. The process for their production was first described in patents granted in 1912 to Leuchs, Lilienfeld and Dreyfus. In the course of the last twenty years the production of these ethers has been started on a manufacturing scale, especially in Germany and the United States. The principal products of this nature are methyl, ethyl and benzyl cellulose and sodium cellulose glycolate. Some of them are soluble in water and are excellent materials for glue, paste or jelly, whilst others are dissolved only by organic solvents, and are used for lacquers, insulating materials, plastics, etc.

The manufacture of cellulose ether products has been taken up in Sweden during the last few years by Uddeholms AB., Svenska Cellulosaaktiebolaget and Mo och Domsjö AB. The material used in this manufacture is refined cellulose of different types. On the basis of the experience thus acquired, we seem justified in stating that also cellulose ethers of the highest quality can be made from Swedish raw products.

Future Prospects.

As shown above, the chemical industry based on cellulose, from a very modest start, has within a short space of time devoloped so as to become a considerable consumer of cellulose. The major part of this consumption is covered by cellulose of wood, chiefly sulphite pulp. Out of the total world production, about 17 million tons per annum, the greater part is still consumed in the manufacture of paper, but over 1.5 million tons, or about 10 per cent., is subjected to further chemical elaboration. Reckoned in value, this latter part may be estimated at nearly 20 per cent., of the total production. The major part consists of viscose cellulose, but refined cellulose for nitration, acetylation etc. is gradually coming into greater use in lieu of cotton linterns, and the production thereof may be expected to increase slowly also after the war.

In the production of cellulose for chemical purposes, Sweden took a leading position at an early date, and at present no other country possesses plants with such a large capacity for

the production of viscose cellulose. During the war the export of viscose cellulose has in fact been the only bright spot on the cellulose market. In 1939 the export amounted to about 200,000 tons, being 10 per cent. of Sweden's total export of pulp; in the course of 1941—1942 the quantity increased to about 300,000 tons and the share in the pulp exports to between 40 and 50 per cent., representing a value of nearly 150 million kronor per annum. In view of the increasing demand, the Swedish viscose pulp industry had been considerably extended; now that export facilities have again been restricted, this industry therefore has a considerable unutilized capacity. — Compared with viscose pulp, refined cellulose, quantitatively speaking, is still of subsidiary importance.

The future prospects for Sweden's production of viscose pulp and refined cellulose are, of course, mainly dependent on the export trade, as it is scarcely conceivable that a domestic production of rayon, staple fibre and cellulose derivatives could consume more than a fraction of the output capacity. The world chemical industry based on the elaboration of cellulose will presumably be further developed in the course of the next few decades, though probably not at the same pace as in the nineteen-thirties, when it was greatly stimulated by the self-support policy of the axis countries. We must perhaps even expect some decline in consumption in the immediate future. But that world requirements of artificial silk, staple fibre and other cellulose products are by no means covered is clearly indicated by the trend in the United States, where, despite free access to other textile materials, the consumption of rayon and staple fibre is now about 300,000 tons per annum and is steadily increasing. This consumption, however, may gradually be curtailed by competition with synthetic textile materials, such as nylon.

The endeavours made in many countries to use domestic wood, straw, reed etc., for the production of cellulose need apparently not be viewed here with much concern. If and when world commerce is resumed under tolerably free forms, both qualitative and economic reasons in the importing countries will plead strongly in favour of the Scandinavian (and North American) pulp, and it may be hoped that these factors will outweigh any endeavours at self-support. Moreover, in certain countries deforestation, before und during the war, has been so drastic as to make the domestic production of cellulose on any large scale rather difficult.

Reverting, in conclusion, to the Swedish chemical industry based on cellulose, we first note with satisfaction the very considerable progress it has made in the course of the last few years. In 1939 this country's total production of viscose silk and staple fibre was merely some 3,000 tons. The estimated output for the present year has risen to about 17,000 tons, whilst the manufacturing programme has become more diversified. The production of cellulose nitrates for civil purposes has increased and new types are being produced. Cellulose ethers of different kinds are now being made.

The production of viscose silk and nitrocellulose is carried on by companies which are independent of the cellulose industry. Cellulose ethers, however, as previously mentioned, are made by the cellulose mills. Should a production of cellulose acetate eventually be started in Sweden, it will presumably be taken up by some maker of cellulose, in connection with the manufacture of other chemical products already established. In our increasing endeavours to achieve a greater refinement of our forest products, the production of cellulose derivatives holds an important place, though, as regards the consumption of pulp, it can never be expected to acquire such magnitude as to vie with that of the paper mills or pulp exporters. We have indeed lagged behind from the outset in utilizing cellulose as a chemical raw products and, though great progress has been made during the last few years in our endeavours to retrieve this neglect, we have as yet by no means caught up the lead taken by foreign countries. Hovewer, intensive efforts on these lines are now being made in this country, and it is by no means inconceivable that they may eventually issue in the establishment of a vigorous exporting industry based on the chemical elaboration of domestic high-grade cellulose.

SWEDISH WHOLESALE TRADE

BY A. ELANDER, HEAD OF THE WHOLESALE TRADE RESEARCH INSTITUTE

Whereas industry and, in some respects, also retail trade have been subjected in most European countries to historical study as well as to scientific investigation, the nature and operations of wholesale trade are still an unexplored domain. The tedious studies of archives and other sources which are essential for historical research in this field seem to have deterred the economic experts. The greatest difficulty in getting a firm grasp of the origin and development of wholesale trade consists in the absence of the necessary documentary material.

In industrial circles the importance of studying internal problems relating to administration and organization was realized at an early date. Very useful results have been achieved by the Industrial Research Institute, founded in 1939, in its endeavours to throw light on the economic and social bases for industrial undertakings.

Since 1926, when the "Goods Distribution Committee" was set up, intensive economic research has been carried on also in this field, chiefly in regard to retail trade. The report of this committee, which was submitted three years later, resulted in the foundation of *Affärsekonomiska Forskningsinstitutet* (AEF), the Business Economy Research Institute, at the Stockholm University of Commerce. Valuable reports on the distribution apparatus have been regularly published by this institution in the daily press as well as in trade journals.

As for wholesale trade, economic research has been apparently restricted to certain investigations by AEF — which, however, have been confined to special branches — and to a small number of studies at the commercial universities of Stockholm and Gothenburg. Mention may be made, in this connection, also of the 1931 census report on Swedish companies and firms. The sparse information which it contains regarding wholesale trade must, however, be taken with the greatest reserve, as great technical difficulties have evidently been encountered in drawing a clear line of demarcation between wholesale houses pure and simple and firms whose distributing apparatus is partly of a wholesale character (general agents, commissioners, mail order firms, etc.).

Development of the Distributing Apparatus.

The modern social community makes very exacting demands on trade. Whilst the development of production has necessitated the formation of large sales organizations for the purpose of canvassing the whole group of consumers which the manufacturing or importing companies desire to reach, the requirements of consumers have also been raised. This has naturally led to a very considerable development of trade as a whole. In 1870, for example, according to the Swedish Year Book of Statistics, the number of persons employed in trade and communications was only 123,000, being 3 per cent. of the whole population of the country. In 1910 the corresponding figure was 576,000 persons, or 10.4 per cent. of the population. At the present time the number of persons thus employed is well over one million, being 15 to 16 per cent. of the population. What proportion of the above figures is represented by wholesale trade cannot, unfortunately, be stated with certainty.

This vigorous development of the distributing apparatus has naturally entailed increased costs of distribution. Professor G. Törnquist's calculations indicate that, out of the final commodity prices, on an average no less than about 50 per cent. represent costs of distribution. Merely a small part of these costs, which may perhaps

be estimated at 10 to 12 per cent., fall to wholesale trade. But that even here very considerable sums are involved is indicated by the fact that the turnover solely of the companies and firms which are members of the Swedish Wholesale Trade Federation exceeds 2 milliard kronor: 10 to 12 per cent. of that amount makes 200 to 250 million kronor.

In itself, there is nothing very remarkable in the fact that such a considerable part of the final price of a commodity should be intended to cover the costs of its distribution. In view of the exacting requirements of consumers, it may be stated that the distribution of goods, from the consumer's point of view, is quite as important as their production. Nevertheless we are at once confronted with the questions: Are the costs of distribution unduly high, or could they be reduced without detriment to the distribution? Is the distribution apparatus satisfactorily organized, or could it be rationalized? Quite certainly, much can be done, and is in fact being done, to rationalize and cheapen the distributing apparatus, especially as regards wholesale trade.

In any attempt to reduce these costs of distribution, one of the first essentials is a thorough knowledge, based on the actual conditions, of the fundamental problems of wholesale trade. Ceaseless studies and planning with a view to the rationalization of the distribution are in fact proceeding within the Swedish Wholesale Trade Federation, which in 1942 established, for this purpose, the Wholesale Trade Research Institute.

Organization and Composition of Wholesale Trade.

Figures for the total turnover of Swedish wholesale trade are not at present available. On a rough estimate, however, it may be assumed that the turnover now amounts to about 3 ½—4 milliard kronor per annum. It should, however, be observed that duplication, *c. g.* in the form of sales from one wholesale company to another, or the sale of raw products or semi-manufactures from wholesale companies to industries, with following resale of the products thus manufactured, has occurred to an unknown extent.

Broadly speaking, Swedish wholesale trade may be divided into the following groups:

1) The wholesale companies which are members of *Sveriges Grossistförbund,* the Swedish Wholesale Trade Federation.

2) The wholesale trade of the cooperative societies.

3) *Inköpscentralerna AB.* (Ica), a buying agency.

4) The completely independent wholesale undertakings.

To this last-mentioned group we may refer, in addition to wholesale houses proper, the following undertakings: — Agricultural cooperative societies, mail order firms, department stores, unit price and multiple-shop concerns — whose distribution organization is partly of wholesale character —, as also, of course the wholesale business which is carried on by many industrial undertakings.

At the end of 1943 about 900 companies and firms had joined the Swedish Wholesale Trade Federation (817 at the end of 1942), representing a turnover of 2,062 million kronor (1,909 million kronor in 1942). According to the report of the Cooperative Federation for 1943, its wholesale business for that year (excluding the sales of its manufacturing establishments and goods supplied under Government contracts) amounted to 273 million kronor (277 million kronor in 1942). The turnover of the Ica concern for 1943 figures at 195 million kronor (177 million kronor in 1942). The aggregate turnover of these three organizations for 1943 thus totalled about 2,550 million kronor.

A direct comparison between the turnover of the different organizations would not be quite fair for the reason that Ica in particular, but also the Wholesale Trade Federation, — the Cooperative Federation in a lesser degree — have increased their membership in the course of the last year. It is certain, however, that the wholesale trade represented by the members of the Wholesale Trade Federation is fully 10 times as large as that of Ica and about 7 times

larger than the corresponding trade in the Co-operative Federation. If we include also the share in the total Swedish wholesale trade which is represented by non-cooperative wholesale concerns which are not members of the Federation, the relative shares of Ica and the Cooperative Federation will be still further reduced.

The Non-cooperative Wholesale Trade.

In the sequel, when speaking of the present wholesale trade, I refer only to non-cooperative wholesalers. Here too a further restriction has been made, in that the material set forth is taken from the companies and firms which are members of the Wholesale Trade Federation. One of the reasons for this is that the different classes of goods which, in a very exemplary way, are statistically dealt with in the reports of the Cooperative Federation do not coincide with the classification of goods in the sales reports of the approximately forty branch organizations which are members of the Wholesale Trade Federation. Despite this restriction, however, the figures given may be considered to be broadly representative, as the turnover of the Federation comprises a larger proportion of Sweden's total wholesale trade than that of the other organizations and independent wholesalers taken together.

Wholesale trade may be roughly divided into the following categories:

1) Buying-up wholesale trade.

2) Middleman trade in semi-manufactured products.

3) Distributing wholesale trade.

The function of *buying-up wholesale trade* consists mainly in collecting goods from many different small producers. The greater the distance between producer and consumer, the more necessary is this trade. As characteristic examples, mention may be made of the wholesale trade in fresh produce, such as eggs, butter, meat, etc.

Middleman trade in semi-manufactured products effects the exchange of goods between different stages of production. The middleman takes over from the one industry (or producer) products which, as semi-manufactures, are sold to another industry. Typical examples are yarns—cloths, flour—bread and chemicals—dyes.

Distributing wholesale trade, on the other hand, is concerned mainly with goods ready for consumption, which before reaching the final consumer, as a rule pass through two or more hands. In contrast to buying-up wholesale trade, the quantities successively diminish as they pass from one hand to another. — In many cases, of course, a wholesale concern represents two or all of the above-mentioned types.

In certain branches the business of most of the companies or firms concerned is not confined solely to wholesale trade. In some cases they represent also industry and retail trade. For example, in the colour and dye branch, wholesale business is combined with industry and — at any rate as regards the larger firms — also with retail trade. A similar combination between industry and wholesale trade often occurs also in the textile branch.

Classification of Goods.

In the statistics annually drawn up by the Wholesale Trade Research Institute, the members of the Wholesale Trade Federation, are divided into four groups, according to the goods in which they mainly deal, namely:

I. Foodstuffs:
   a) Fresh produce,
   b) Other goods.
II. Clothing and home equipment.
III. Building materials, etc.
IV. Miscellaneous branches.

Group I (a), Fresh produce, comprises firms and branch organizations engaged mainly in the sale of fruit, vegetables, meat, potatoes, fresh fish, game, eggs, and so on. The total turnover of the 230 members representing this branch in 1943, amounted approximately to 230 million kronor, being an increase of 22 per cent. as compared with 1942. The largest increase, 59 per cent., was shown by the sale of meat, which is obviously connected with the alleviations granted, in the course of the year, in the rationing of that product. The large slaughter

of cattle in the autumn of 1940 entailed a considerable shortage of meat in 1941 and 1942, and it was not till towards the autumn of 1943 that the increase in the supply began to make itself felt. A somewhat similar trend is shown by the sale of eggs, which increased by nearly 20 per cent. The most marked decrease is shown by the sale of game, which was due partly to import difficulties in the autumn of 1943, partly to the improvement in the supply of other kinds of meat.

In *group I (b), Other goods,* which comprises firms engaged in the sale of colonial products, other groceries, sweetmeats, cheese, etc., the largest increase is shown in the sale of coffee, the ration of which, owing to the greater facilities for importation from overseas countries, was raised in 1943 from 516 to 1,689 grams per head. The total sales in this sub-group amounted in 1943 to about 465 million kronor (450 million kr. in 1942); out of this figure, a sum of 353.1 million kronor represents the turnover of the Swedish National Federation of Wholesale Dealers in Colonial Produce, the largest branch organization with 146 members.

Group II, Clothing and home equipment, which includes dealers in all kinds of textiles as well as boots, shoes and leather goods, shows a turnover for 1943 of 325 million kronor, being an increase of 10.5 per cent., as compared with 1942. The sales of the National Federation of Wholesale Dealers in Textiles, which comprises 110 firms, alone figure at about 230 million kronor, being an increase of 16.5 per cent. This considerable increase must be viewed in the light of the rationing of textiles, which came into force on the 1st January 1942. It was rather widely anticipated that textiles would be rationed from about that date, with the consequence that both the dealers and the general public considerably increased their purchases during the preceding December. In view of this fact and the temporary suspension of the sales of textiles at the beginning of 1942, the total figure for 1942 is lower than it otherwise would have been. The right to exchange unutilized textile coupons, which was granted in 1943, seems to have conduced to the increased sales in that year. It should further be noted that certain retail dealers in ready-made clothing, being unable to obtain sufficient supplies from the makers, had applied to leading wholesale dealers in cloths to cover their requirements of lining materials, etc.

Firms dealing chiefly in boots, shoes and leather goods showed a decrease of nearly 25 per cent. in turnover. This decrease must be entirely attributed to the rationing of those goods, which came into force in May 1943.

Group III, Building materials etc, comprises companies (or firms) engaged in the sale of electric material, colours and dyes, iron, pipes and sanitary installations, wood and glass. The turnover of these companies in 1943 amounted to about 600 million kronor, as compared with nearly 576 million kronor in 1942. The largest increase in turnover was shown in regard to electric material, colours and dyes, wood and glass, whilst companies and firms engaged chiefly in the sale of iron goods showed the most marked decrease. This was partly due to the fact that the imports, for various reasons (such as reduced quotas), could not be maintained at the same level as in the immediately preceding year, partly to restrictions in the grant of building and labour permits.

To *Group IV, Miscellaneous branches,* have been referred some ten organizations whose sales cannot be included under any of the other three main groups, such as companies or firms engaged in the sale of gold and silver wares, office machines, toys, paper, watches and clocks, optical material, etc. The total turnover of these organizations in 1943 amounted to more than 480 million kronor, as compared with 411 million kronor in 1942.

Present-day Problems of Wholesale Trade.

In addition to the above-mentioned problems regarding measures of rationalization, wholesale trade is confronted with several other burning questions. Among them we note in the first place the question of *integration in the direction of manufacturing business* or, in other words, the tendency which we observe when a

trading concern starts production on its own account. In this development the Cooperative Federation has led the way and has gone furthest. A similar tendency has, hovewer, been shown also by the so-called collective buying concerns, namely AB. Svenska Kolonialgrossister (A. S. K.), a union of wholesale dealers in groceries, and Ica. Hitherto, however, they have realized their plans merely in some few lines. How this development will shape itself in the future is one of the problems which is now engaging the attention of producers as well as of wholesale and retail dealers, more especially in the foodstuffs line.

Another problem with which the wholesale dealers are confronted is the question of *integration in the direction of retail trade*. As to how these problems of integration will be finally settled, it is still too early to express an opinion. On the other hand, it may at once be stated that, if trade after the end of the war is allowed to develop freely without State control or State patronage of any particular form of undertaking, it may certainly look forward to a vigorous development, satisfactory to all the parties concerned. We may hope that scope will be given for free competition, so that the development will be dominated by those forms of organization which can best hold their own against competitors.

The dispersion of goods between different branches, that is, an extension of the regular assortment of one branch by the sale of goods which by nature have been considered to belong to other branches, is another problem which has been much discussed, especially in recent years. Such dispersion occurs, for example, on a relatively large scale between the groceries branch and the colour and dye trade. It is most noticeable in regard to goods of well-known brands, and may be regarded, in the main, as a wartime phenomenon, due to shortage of goods and to wartime regulations of various kinds. This problem, however, cannot be dismissed as being merely of temporary interest — the tendency will certainly persist even after the war. How far it is economically remunerative will be shown when the supply of goods has again become normal.

Not only for trade as such, but also for the whole nation, the question as to the position of wholesale trade after the war is of the greatest importance. The objective which the wholesale dealers are earnestly striving to attain, namely the most effective distribution conceivable, can only be realized by free trade based on private initiative. Indeed, in all branches of trade, it is generally agreed that one of the most essential conditions for economic progress is that the State institutions, which have come into being on account of the war conditions, and with which the representatives of industry and commerce have, on the whole, successfully cooperated, may successively be wound up, as soon as their retention is no longer necessitated by the exigencies of the situation.

THE ECONOMIC SITUATION DURING THE THIRD QUARTER OF 1944

The General Situation. Now that, owing to the war operations in the Baltic, insurances since the latter part of August are no longer granted for Swedish shipping to German ports, and since towards the end of September a prohibition against foreign commercial navigation in Swedish territorial waters in the Gulf of Bothnia and the Baltic was issued, the traffic between Swedish and German ports has almost entirely stopped. This stoppage of shipping traffic not only involves lack of employment for Swedish vessels, seamen and dockers, but also menaces us with difficulties in regard to the supply of fuel. Though the year's harvest seems to be somewhat less favourable than had been expected, and even if the promised export of foodstuffs for the relief of Finland is taken into account, the situation in regard to the supply of fuel and foodstuffs may be regarded as satisfactory. The stabilization of prices and wages has greatly conduced to the present stability of Sweden's economic life. The question as to the continuation of this policy is doubtless the most important internal problem with which we are now confronted, and will be brougt into the foreground during the coming negotiations for the renewal of collective agreements with some 833,000 workers.

Abrupt changes in the weather have made it difficult to judge the harvest prospects. After a cold and rainy spring and early summer, warm and settled weather followed in July and August. The fine weather accelerated the retarded growth, besides facilitating the harvesting of hay and cereals. In many places, however, owing to the drought, a second hay crop was not forthcoming and the cereals ripened prematurely. Potatoes and root crops were also retarded and the pasture-grounds dried up until the situation was improved by a rainy period at the beginning of September. According to the official harvest-returns at the end of August, it was estimated that the cereals crop would be 6 per cent. less and the hay crop 16 per cent. larger than the average harvests in 1933—1942. In several counties a deterioration in quality was observed on sample thrashing.

The supply of other important agricultural produce markedly increased during the first six months of this year, as compared with the same period in 1943. The supply of dairy milk, for example, increased by 11.6 per cent., and the production of butter and cheese by 16.0 and 46.5 per cent., respectively. The total production of meat for sale on the market increased by 53.9 per cent., the increase for pork and bacon being no less than 78.1 per cent., and for other kinds of meat 34.7 per cent. Some decrease in the production of pork and bacon may, however, be expected.

As regards sea-fisheries, the changes, broadly speaking, have been less marked. Much larger hauls of herring on the west and south coasts have, however, occurred. The commercial yield of fishing has, generally speaking, declined, which seems to be due to reduced demand owing to the larger supply of meat during the summer. West coast fishing was restricted during the late summer owing to new blockades of the best fishing waters off Skagen.

The stoppage of shipping traffic to and from German Baltic ports has brought up the question of our fuel supply which during the fuel year July 1943—June 1944 was based as to 40 per cent. on imported coal and coke, as compared with 83 per cent. before the war. The supply of fuel, however, is now larger than at any previous

time during the war: the stocks of coal and coke are relatively large, considerable quantities thereof were imported up to August this year, and the output of firewood during the past fuel year amounted to 43.2 million cubic metres, which practically corresponded to the timber-cutting programme. No tightening of the fuel restrictions for the households is immediately impending, but new restrictions have been carried into effect as regards the coal consumption of railways and industrial establishments. The transports of firewood have been highly pressed on and make full use of the capacity of the transport system.

The improvements in farmer's earnings and the shortage of agricultural labour have tended to encourage rationalization. In some quarters the demand for agricultural machinery has exceeded the supply, and the electrification of agriculture has made rapid progress in many districts which in this respect had been rather behind the times. In many parts of the country farm buildings are being repaired or modernized, and dwelling-houses are being reconditioned.

Building in general has been proceeding briskly, especially as regards dwelling-houses, the erection of which is subsidized by the State and the local authorities. The State Building Loan Bureau contemplate for the next financial year to a housing supply on as large a scale as this year, that is, about 40,000 apartments, as compared with about 45,000 apartments in 1939 and on an average about 36,000 apartments in 1935—1939. In some parts it has been found difficult to satisfy the considerably increased requirements of building materials: in particular, deliveries from the brick-works, where many worker have been called up for military service, have been long delayed. The supply of window-glass is also menaced by the fact that the largest producers, the Oxelösund Iron Works, in the middle of May, owing to the shortage of coal, were obliged to shut down the coke-plant and, in consequence, also their glass-works. The starting of new glass-works which would not be dependent on imported fuel would require the supply of certain refractory material, which cannot be produced in Sweden. The stocks of window-glass are, however, comparatively large and are expected to last to the end of the year. Other difficulties for the builders are caused by the shortage of roofsheeting and of asphalt for roofing-boards. On the other hand, during the war Sweden has been fairly self-supporting as regards building iron, which had formerly been imported on a rather large scale. The question of the increased production of various kinds of rolled iron previously imported from Germany has been brought into the foreground by recent events.

Broadly speaking, the iron and steel industry and the engineering workshops have greatly increased their output capacity. Partly owing to the shortage of labour, however, some decrease in production is now observable in the iron industry. The output of the engineering workshops has been better maintained, diminishing orders for military purposes and for export being compensated by production for the civil home market. Other home-market industries, within the limits set by the supply of raw materials and labour, have generally speaking, been well employed.

The export market is still declining. It should be noted, however, that the sawmills, as also the iron and metal industries, have been well supplied with orders for domestic building. The pulp mills, on the other hand, have been compelled to reduce their output very considerably, despite the production of more than 550,000 tons of chemical pulp for storage. There are also sufficient stocks of pulpwood for the entire output capacity of the chemical pulp mills, amounting to about 200,000 tons per month; the mills are therefore in a position to make large deliveries after the removal of the blockade. It is interesting to note in this connection that preliminary agreements for the sale to England of 250,000 to 300,000 tons of chemical pulp and about 100,000 tons of wet mecanical pulp have been submitted to the Swedish Government for approval. Production for storage is reported to have been started also in the iron industry and engineering workshops, in view of expected facilities for exportation in the proximate future.

Statistics for Sweden's foreign trade now cover the time unto the end of August 1944, thus before the complete stoppage of shipping in the

Baltic. Owing to the blockade of the normal shipping routes, safe-conduct shipping has assumed greater importance. During the present year this traffic has proceeded unhindered and has supplied Sweden with relatively large quantities of foodstuffs, raw materials for foodstuff production, agricultural requisites, hides, skins and cotton. During the first six months of this year 34 of these vessels arrived, with cargoes amounting to 263,500 tons as against 20 vessels with cargoes of 173,300 tons during the same period last year, when this traffic was suspended for four months. During the months of July—August this year 16 safe-conduct wessels have entered and the same number have been cleared.

	Imports	Exports	Surplus of imports
	Million kronor		
Jan.—Aug. 1938	1,302	1,185	117
» » 1939	1,559	1,253	306
» » 1940	1,409	884	525
» » 1941	1,051	843	208
» » 1942	1,118	805	313
» » 1943	1,206	802	404
» » 1944	1,216	545	671

The labour market in several branches is characterized by a shortage of workers, which was aggravated in the summer by the harvest season and the calling-up of conscripts. A large number of building enterprises have been deferred till the winter, as the authorities, with a view to seasonal equalization of employment in the building trades, had temporarily refused to grant building permits. In the north of Sweden, owing to the demand for forest labour, greater facilities are now available for obtaining employment during the winter season.

The spending power infused by the excess State expenditure has been manifested in a large trade turnover and brisk tourist traffic within the country.

The sales of various articles of consumption, especially furniture and household utensils, according to the reports of the Bureau of Economic Research, showed a marked recess in 1940, followed by a steady recovery up to the end of 1942. The improvement appears to have continued also after that date. It is reported from various quarters that purchases, to a far greater extent than before, are being paid in cash, which will considerably strengthen the position of the dealers in view of a possible peace crisis.

Favoured by the fine weather in July and August, tourist traffic to the seaside resorts in the south of Sweden has been on a record scale. Partly owing to the decline of motoring, holiday resorts on the coast of Norrland and in the interior of the country have been less frequented.

The money market is still very easy. Loans previously granted are being rapidly paid off and such new credits as are being demanded are chiefly in the nature of new loans on the security of house property. Bank deposits continue to increase. The deposits on savings account in the commercial banks from the beginning of 1939 to the end of August 1944 have increased from 746 to 1,186 million kronor, or by 59 per cent. During the same period the total deposits in commercial banks and savings banks (including that of the Post Office) have increased from about 8.6 to approximately 12.5 milliard kronor, or roughly by 50 per cent. The deposits in the commercial banks exceed the advances by 1.2 milliard kronor. And their liquid funds together with their holdings of bonds and treasury bills total 2.56 milliard kronor, or nearly one-third of their total assets.

Assets (in mill. kr.)	April	May	Juni	Juli	Aug.
Cash	375	448	394	562	609
Treasury bills	482	381	566	567	645
Swedish bonds	1,317	1,320	1,312	1,299	1,307
Advances in Sweden . . .	4,842	4,864	4,852	4,836	4,886
Assets abroad	76	82	77	70	70
Sundry accounts	411	432	447	416	418
Total	7,503	7,527	7,648	7,750	7,935
Thereof, Swedish bonds and treasury bills . . .	1,799	1,701	1,878	1,866	1,952
Liabilities (in mill. kr.)					
Deposits in Sweden . . .	5,690	5,706	5,769	5,900	6,070
Liabilities abroad	246	254	259	250	245
Share capital and reserve funds	819	819	819	819	819
Sundry accounts	748	748	801	781	801
Total	7,503	7,527	7,648	7,750	7,935

Foreign Exchange Rates. No marked fluctuations in the foreign exchange rates have oc-

cured in the course of the year, with the exception of Portuguese escudos and Argentine pesos. The former were quoted at kr 17: 50 from the beginning of the year to the middle of February, when the rate dropped to 17: 15. The quotation was maintained at this level till the beginning of August, when a decline set in, and the rate gradually fell to 16: 60. At this point the Portuguese national bank intervened, and on the 23rd August the rate was again raised to 17:15.

Among the new regulations introduced in Portugal, the prohibition against any other transfer of escudos than between the accounts of holders in the same country seems to have put a definite stop to all international arbitrage transactions. As transactions in escudos thus can only take on between Sweden and Portugal or vice versa, the national banks of those countries entered into touch with one another, with a wiev to the establishment of more stable rates and the facilitation of commercial exchanges. On the 12th September the quotation of escudos was fixed by the Riksbank at 16: 29 for bidders and 16: 55 for sellers. The Swedish and Portuguese commercial banks, however, are at liberty to transact business in escudos between themselves.

The rate of exchange for Argentine pesos has fluctuated between kr. 103: — and 104: 50. Transactions in this currency have been on a fairly large scale, but most of them pass through the Riksbank.

The clearing rates have remained unchanged during the year, except that the quotation for Spanish pesetas was lowered on the 22nd January from kr 43: 33 to 38: 41, in order to bring it into closer correspondence with the quotation for the krona at Madrid.

Under present conditions the dealings of the commercial banks in foreign exchange are insignificant: they are mainly confined to dollars, Swiss francs and pounds sterling.

The Share Market. During the third quarter of the year the Stock Exchange has been greatly influenced by war developments. In July the greater expectations of approaching peace were reflected in a temporary rise of share prices; the dealings, however, were on quite a moderate scale, namely about 273,000 kronor per day. In August a general and marked rise of share prices set in, especially as regards the shares of the exporting industries: a few days the turnover exceeded 800.000 kronor. The relatively largest rise in prices was shown by Match shares, which during that month rose from 23 to 30 kronor: about 66,000 of those shares changed hands. This rise of share prices culminated at the beginning of September. The losses which afterwards set in as a reaction from the upward trend of the preceding period have since been recovered, apparently owing to the large demand for investments in shares.

Index numbers for share prices during the last few months are given in an accompanying table.

Share Index.	1939 Jan.	1940 Jan.	1941 Jan.	1942 Jan.	1943 Jan.	1943 July	1943 Oct.	1944 Jan.	1944 Feb.	1944 March	1944 April	1944 May	1944 June	1944 July	1944 Aug.	1944 Sept.
Home industries	175	145	148	166	168	156	168	168	164	165	167	168	164	166	169	171
Other industries	171	130	155	178	188	178	190	195	190	196	197	192	188	192	202	206
Of which																
Grängesberg Company	191	131	155	189	191	167	185	190	180	190	197	181	179	181	192	199
Exporting engineering industries	195	133	161	187	191	188	200	209	205	212	221	217	208	210	227	225
Other, including iron and steel ind.	181	138	170	188	188	167	179	181	177	185	177	174	175	178	191	186
Wood-goods and pulp-ind.	124	104	119	135	153	147	157	160	155	160	157	155	152	158	168	173
Combined wood and iron ind.	200	184	211	250	278	270	287	288	281	281	283	278	273	274	278	290
Banks	192	143	156	169	178	170	182	190	191	194	190	190	193	195	202	207

Note. Where not otherwise stated, the figures are for the middle of the month.

The Bond Market. In the following table approximate figures are given for the yield (in percentage) corresponding to the market prices during the last few months.

Yield on Bonds (in %).

Swedish Government.	Number of loans	15/2	15/3	14/4	15/5	16/6	14/7	15/8	15/9
3 % 1934–. Conv. 1944	1	3.29	3.30	3.33	3.33	3.32	3.32	3.31	3.30
3 % 1937–97. Conv. 1947	1	3.30	3.29	3.30	3.29	3.28	3.29	3.29	3.29
Mortgage Banks.									
3 % Conv. 1944—47 . .	4	3.30	3.30	3.30	3.32	3.31	3.31	3.30	3.30
Repayment 1999–2009, at latest.									
Municipalities.									
3 and 3¼ % Conv. 1945—46	2	3.27	3.27	3.28	3.28	3.29	3.26	3.25	3.22
Repayment 1965–1966, at latest.									
Industrial Companies.									
3¼ % 1937–57. Conv. 1947	3	3.57	3.62	3.62	3.62	3.62	3.62	3.60	3.57
3½ % 1937–62. » 1947	1	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53

It will be seen from the above table that a slight rise in bond prices has occurred. This is connected with new Government borrowing and conversions of Government loans. It had long been foreseen that a long-term 3½ % Government loan would be issued in the autumn at par. Pending this issue, the quotations for earlier 3.5 % bond loans, after previous rises in price, have been adjusted downwards to close on par. The new Government loan, which was announced on the 14th September, consists of a fifty-year 3.5 % loan of undetermined amount and is being offered at par during the period 21st September — 7th October. Furthermore, the 1940 lottery bond loan of 150 million kronor, the last drawing of which falls due on the 2nd October, is about to be converted. During the period 17th October—30th November the bonds of this loan will be exchanged for bonds belonging to a new lottery bond loan of 200 million kronor. The surplus of 50 million kronor is offered for subscription at the rate of kr. 51 (102 %). In addition, treasury bills to the amount of about 350 million kronor, placed with the commercial banks for 13 months at 1½ % interest, matured on the 30th September and have been exchanged against new treasury bills totalling 250,000 million kronor, out of which half the amount will mature in 6 and the remainder in 16 months. Finally, a 2 % loan of 500 million kronor, placed with the commercial banks two years ago, falls due for repayment on the 15th December. The two last-mentioned operations, taken together, thus amount to the considerable sum of 850 million kronor in short loans. Due to the prevailing and expected scarcity of material as regards short loans, these have been subject to a rise in quotations.

Except for the announcement of the new Government loan, only one large new issue has occurred, viz. a 3½ % loan of 8 million kronor issued by the Kramfors AB. at par. As will be seen from the table below, the total volume of bonds in circulation during the quarter has increased by somewhat more than 200 million kronor. This is chiefly due to the increase of the Government loans, which at the beginning of July amounted to 6.92 milliard kronor, out of a total of 10.40 milliard kronor.

	1/1 1938	1/4 1944	1/7 1944
	Million kronor		
Swedish Government . . .	1,840.8	6,737.3	6,923.4
Mortgage Banks or Societies	1,919.5	2,252.3	2,292.9
Municipalities	412.6	480.2	472.5
Industrial and Transport Companies	1,063.0	682.5	678.4
Other Issuers of Loans . .	56.3	35.7	35.4
Total	5,292.2	10,188.0	10,402.6

Some Statistical Data Concerning Sweden's Economic Position.

Currency Reserve, Stock of Gold, Note Circulation.

	Net Claims of Banks on Foreign Countries million kronor (End of month)									The Riksbank's								
										Stock of Gold[1] (million kr.)			Stock of Gold and Net Claims on Foreign Countries[1] (million kr.)			Note Circulation (million kr.)		
	Riksbank			Commercial banks			Total											
	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944
Jan.	760	535	620	−129	−138	−146	631	397	474	947	1429	1676	1707	1964	2296	1562	1867	2114
Feb.	693	554	626	−128	−138	−150	565	416	476	1054	1435	1686	1747	1989	2312	1534	1842	2061
March	632	567	566	−131	−144	−167	501	423	399	1162	1443	1770	1794	1988	2335	1558	1842	2057
I (Average)	**695**	**552**	**604**	**−129**	**−140**	**−154**	**566**	**412**	**450**	**1054**	**1436**	**1711**	**1749**	**1980**	**2314**	**1551**	**1850**	**2077**
April	620	584	559	−132	−134	−169	488	450	390	1175	1445	1791	1795	2029	2350	1580	1870	2087
May	542	596	564	−141	−141	−171	401	455	393	1292	1452	1808	1835	2048	2372	1560	1831	2069
June	543	627	570	−142	−139	−182	401	488	388	1297	1459	1813	1840	2086	2383	1631	1907	2138
II (Average)	**568**	**602**	**564**	**−138**	**−138**	**−174**	**430**	**464**	**390**	**1285**	**1452**	**1804**	**1823**	**2054**	**2368**	**1590**	**1869**	**2098**
July	546	571	600	−136	−133	−180	410	438	420	1307	1546	1829	1852	2117	2429	1627	1890	2123
Aug.	547	575	569	−131	−128	−175	416	447	394	1326	1558	1885	1873	2133	2454	1677	1960	2156
Sept.	550	588	563	−135	−127		415	461		1348	1570	1907	1898	2158	2470	1728	2024	2223
III (Average)	**548**	**578**	**577**	**−134**	**−129**		**414**	**449**		**1327**	**1558**	**1874**	**1874**	**2136**	**2451**	**1677**	**1958**	**2167**
Oct.	559	601		−132	−150		427	451		1371	1588		1930	2189		1780	2059	
Nov.	562	609		−127	−135		435	474		1389	1613		1951	2222		1784	2043	
Dec.	551	652		−141	−149		410	503		1407	1627		1958	2279		1910	2161	
IV (Average)	**557**	**621**		**−133**	**−145**		**424**	**476**		**1389**	**1609**		**1046**	**2230**		**1825**	**2088**	
Notes	The figures comprise balances with foreign customers and holdings of foreign bills and foreign bonds less amounts due to foreign customers									At end of month						Monthly averages		

[1] The Riksbank holding of gold is given at its market value, other items at their book values.

Commercial Banks, Stock Exchange.

	Commercial banks									Share Index						Shares sold on the Stockholm Stock Exchange (1000 kr.)		
	Deposits (million kr.)			Advances incl. bills rediscounted (million kr.)			Surplus of Deposits (million kr.)			Home Industries			Other Industries					
	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944
Jan.	4779	5193	5686	4208	4305	4635	571	888	1051	166	168	168	178	188	195	493	408	474
Feb.	4699	5091	5643	4204	4372	4688	495	719	955	171	160	164	186	177	190	767	380	396
March	4796	5173	5680	4213	4396	4814	583	777	866	162	161	165	182	182	196	1182	369	505
I (Average)	**4758**	**5152**	**5670**	**4208**	**4358**	**4712**	**550**	**794**	**957**	**166**	**163**	**166**	**182**	**182**	**194**	**814**	**386**	**458**
April	4803	5151	5690	4181	4468	4842	622	683	848	168	165	167	192	186	197	1172	372	476
May	4711	5192	5706	4170	4525	4864	541	667	842	174	161	168	194	184	192	589	347	296
June	4804	5261	5769	4161	4509	4852	642	752	917	169	156	164	184	180	188	506	289	364
II (Average)	**4773**	**5201**	**5722**	**4171**	**4501**	**4853**	**602**	**700**	**869**	**170**	**161**	**166**	**190**	**183**	**189**	**756**	**336**	**379**
July	4940	5397	5900	4094	4454	4836	846	943	1064	173	156	166	188	178	192	399	282	273
Aug.	5014	5510	6070	4097	4476	4886	917	1034	1184	178	159	169	196	185	204	676	358	551
Sept.	5093	5629		4238	4492		855	1137		181	163	171	200	189	206	406	605	459
III (Average)	**5016**	**5512**		**4143**	**4474**		**873**	**1038**		**177**	**159**	**169**	**195**	**184**	**201**	**494**	**415**	**428**
Oct.	5126	5708		4226	4510		900	1198		176	168		194	190		270	390	
Nov.	5005	5519		4274	4648		731	871		169	165		186	188		444	368	
Dec.	5021	5602		4333	4673		688	929		166	164		186	183		336	402	
IV (Average)	**5051**	**5610**		**4278**	**4610**		**773**	**999**		**170**	**166**		**189**	**189**		**350**	**387**	
Notes	Deposits from and loans to the public within the country (at the end of the respective month)									The figures denote mid-monthly average prices						Averages per Stock Exchange business day		

Rates of Interest and Price Level.

	Yield on Bonds (%)						Wholesale Price Index (Board of Trade) (1935 = 100)									Cost of Living Index (July 1914 = 100)		
	Govt. Loans			Industrial Loans			Import Goods			Export Goods			All Goods					
	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944
Jan.	3.25	3.26	3.31	3.71	3.62	3.57	256	293	298	172	204	208	182	196	195	227	239	240
Feb.	3.25	3.28	3.29	3.74	3.62	3.57	258	291	298	172	205	208	183	197	195	·	·	·
March	3.26	3.28	3.30	3.80	3.61	3.62	261	291	301	177	206	208	184	197	195	·	·	·
I (Average)	3.25	3.27	**3.30**	**3.75**	**3.62**	3.59	**258**	**292**	**299**	**174**	**205**	**208**	**183**	**197**	**195**			
April	3.26	3.29	3.33	3.76	3.62	3.62	264	293	297	186	206	208	186	197	195	236	240	241
May	3.26	3.29	3.33	3.76	3.62	3.62	268	293	293	188	206	208	187	197	197	·	·	·
June	3.26	3.30	3.32	3.70	3.62	3.62	267	293	291	190	206	208	188	197	197	·	·	·
II (Average)	3.26	**3.29**	**3.33**	**3.74**	**3.62**	**3.61**	**266**	**293**	**294**	**188**	**206**	**208**	**187**	**197**	**196**			
July	3.26	3.33	3.32	3.70	3.62	3.62	273	293	291	196	206	208	193	196	198	237	239	240
Aug.	3.25	3.32	3.31	3.66	3.62	3.62	281	293	291	198	206	208	192	195	197	·	·	·
Sept.	3.26	3.31	3.30	3.57	3.62	3.57	283	293		199	206		192	195		·	·	·
III (Average)	**3.26**	**3.32**	**3.31**	**3.64**	**3.62**	**3.60**	**279**	**293**		**198**	**206**		**192**	**195**				
Oct.	3.26	3.33		3.59	3.55		285	295		201	206		193	195		239	239	
Nov.	3.25	3.33		3.62	3.56		288	295		202	206		195	195		·	·	
Dec.	3.28	3.33		3.62	3.57		291	295		202	206		195	195		·	·	
IV (Average)	**3.26**	**3.33**		**3.61**	**3.56**		**288**	**295**		**202**	**206**		**194**	**195**				
Notes	Calculated on market prices at middle of months															Refers to end of quarters		

Trade and Industry.

	Total Imports (million kr.)			Total Exports (million kr.)			Index of Production according to Feder of Swed. Industries (1935 = 100)			Supply of Industrial Work Index numbers			Waggon-axle Kilometres of loaded Trucks on State Railways			Unemployment in Trade Unions (%)		
	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944	1942	1943	1944
Jan.	155	164	122	86	77	47	104	110	108	3.34	3.7	3.5	88.0	92.7	89.8	13.7	8.4	8.5
Feb.	73	147	155	42	74	62	106	111	109	3.38	3.6	3.5	92.6	99.4	103.0	12.5	7.4	8.0
March	50	152	169	54	84	69	106	110	109	3.41	3.7	3.6	100.6	113.3	114.0	11.1	6.4	7.2
I (Average)	**93**	**154**	**149**	**61**	**78**	**59**	**105**	**110**	**109**	**3.38**	**3.7**	**3.5**	**93.7**	**101.8**	**102.3**	**12.4**	**7.4**	**7.9**
April	99	131	158	99	95	63	107	111	109	3.52	3.7	3.6	101.8	101.1	102.9	8.1	6.0	5.4
May	184	143	164	125	127	73	107	110	108	3.66	3.8	3.7	104.3	102.7	101.2	6.0	4.4	3.7
June	190	147	162	142	132	84	109	109	109	3.67	3.8	3.7	95.5	90.0		4.9	4.4	3.2
II (Average)	**158**	**140**	**161**	**122**	**118**	**73**	**108**	**110**	**109**	**3.62**	**3.8**	**3.7**	**100.5**	**97.9**		**6.3**	**4.9**	**4.1**
July	165	186	144	137	112	79	110	108	107	3.74	3.9	3.8	98.9	105.9		4.3	3.9	2.8
Aug.	203	136	140	120	101	68	110	106		3.78	3.8		102.6	102.6		4.0	3.5	
Sept.	180	162		119	101		110	107		3.78	3.8		105.9	103.1		4.3	3.5	
III (Average)	**183**	**161**		**126**	**105**		**110**	**107**		**3.77**	**3.8**		**102.5**	**103.9**		**4.3**	**3.6**	
Oct.	154	167		152	87		110	108		3.75	3.7		100.7	103.2		4.8	4.5	
Nov.	157	153		116	83		111	109		3.67	3.7		93.9	96.2		5.9	5.8	
Dec.	160	130		122	77		111	109		3.68	3.6		94.6	93.3		10.3	9.6	
IV (Average)	**157**	**150**		**130**	**82**		**111**	**109**		**3.70**	**3.7**		**96.4**	**97.6**		**7.0**	**6.6**	
Notes							Seasonal change removed			The figure 3 denotes normal supply of work			Million kilom. per month			% of total members at end of month		

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(Ball Bearings) . . . B, stamped											
» Svenska Metallverken (Metal Products)	16.35	60	4.80	4.80	4.80	89	89	91.50	96.50	93.50	» Svenska Metallverken (*Metallwaren*)
» Svensk Filmindustri (Film and Cinema Business) . . . . . Series A	8	30	2.10	2.70	[9] 2.70	52	53	54	59	56	» Svensk Filmindustri (*Film und Kino*) *Ser. A*
» Sveriges förenade Tri-kåfabriker (Textiles) . { Pref.	3.50	100	10	10	10	—	205	210	215	215	» Sveriges förenade Tri-kåfabriker (*Textilwaren*) { *Vorzugs-Aktien*
Ord.	6.60	100	10	10	10	205	205	210	215	215	*Stamm-Aktien*
» Sveriges Litografiska Tryckerier (Lithographical Printers) . . . { Pref.	12	100	7	7	7	152	160	153	156	160	» Sveriges Litografiska Tryckerier (*Lithographische Druckereien*) { *Vorzugs-Aktien*
Ord. A	16	100	6	6	6	135	135	—	133	131	*Stamm-Aktien A*
» A 1930 . .	11	100	6	6	6	128	130	—	133	131	» *A 1930*
» B	4.4	100	6	6	6	122	122	[4] 128	125	124	» *B*
» Turitz & Co. (Department and Chain Stores)	9	100	15	15	15	330	320	322	338	325	» Turitz & Co. (*Warenhäuser und Kettenläden*)
» Volvo (Motorcars)	25	50	3	3	3	67	69	72.50	79.50	79	» Volvo (*Automobile*)
» Åtvidabergs Industrier (Office Utensils) Series II	3.6	100	[8] 14	12	12	256	[4] 265	260	265	265	» Åtvidabergs Industrier (*Büromaterial*) *Ser. II*
Allmänna Svenska Elektriska A.-B. (ASEA) (Electrical Machinery)	90	100	10	9	9	200	201	211	217	212	Allmänna Svenska Elektriska A.-B. (ASEA) (*Elektrische Maschinen*)
Bergvik & Ala Nya A.-B. (Pulp and Timber)	28.12	180	10	12	12	240	265	272	298	295	Bergvik & Ala Nya A.-B. (*Holzmasse und Holz*)
Billeruds A.-B. (Paper, Pulp and Timber) . .	31.02	100	8	8	8	162	167	176	188	185	Billeruds A.-B. (*Papier, Holzmasse und Holz*)
Bolidens Gruv A.-B. (Gold, Copper, etc.)[7] . .	42	50	7.50	6	6	118	117	127	133	128	Bolidens Gruv A.-B. (*Gold, Kupfer etc.*) [7]
Fagersta Bruks A.-B. (Iron and Steel) A . .	18.5	100	6	6	6	115	112	115	124	124	Fagersta Bruks A.-B. (*Eisen und Stahl*) A
» » » » » » B, free[5] .	11.5	100	6	6	6	115	112	115	124	124	» » » » » » B, *frei*[5]
Fastighets A.-B. Hufvudstaden (Real Estate Holdings) } free[5] . . .	16	100	4.50	5	6	140	142	145	143	146	Fastighets A.-B. Hufvudstaden (*Grundstückgesellschaft*) } *frei*[5]
		100	4.50	5	6	140	142	145	143	147	
Ford Motor Company A.-B.[5]	5	100	8	—	—	129	134	140	140	140	Ford Motor Company A.-B.[5]
Holmens Bruks- & Fabriks A.-B. (Pulp, Paper, Woollen and Cotton Goods) . . . . . { Series A .	21	100	6	6	7	128	135	144	146	145	Holmens Bruks- & Fabriks A.-B. (*Papier, Holzmasse, Woll- u. Baumwollwaren*) . . . . . { *Ser. A*
» B[5] .	13.56	100	6	6	7	127	135	144	146	145	» *B*[5]
Höganäs-Billesholms A.-B. (Coal, Firebrick and Clay Goods)	30	100	9	9	9	201	200	204	213	203	Höganäs-Billesholms A.-B. (*Kohlen, Feuerfeste Steine und Tonwaren*)
Kopparfors A.-B. (Pulp and Timber)	20	100	5	6	6	133	133	135	155	154	Kopparfors A.-B. (*Holzmasse und Holz*)
Korsnäs' Sågverks A.-B. (Paper, Pulp and Timber)	21	100	5	6	6	163	162	164	185	175	Korsnäs' Sågverks A.-B. (*Papier, Holzmasse u. Holz*)
Linoleum A.-B. Forshaga (Linoleum)[5] . . .	4	50	4.10	4.10	4.10	—	90	90	96	96	Linoleum A.-B. Forshaga (*Linoleum*)[5]
Mexikanska Telefon A.-B. Ericsson (Telephone Service) . . . . { Series A[5]	5.4	180	—	—	—	131	134	135	157	145	Mexikanska Telefon A.-B. Ericsson (*Fernsprecherdienst*) . . . . . { *Ser. A*[5]
» B[5]	16.2	180	—	—	—	131	140	140	155	148	» *B*[5]
Mo och Domsjö A.-B. (Pulp and Timber) . { Series A	32	100	8	10	8	190	200	200	221	210	Mo och Domsjö A.-B. (*Holzmasse und Holz*) { *Ser. A*
» B[5]		100	8	10	8	190	205	200	221	205	» *B*[5]
Munksjö A.-B. (Paper, Pulp and Timber) . { Series A	10	100	5	5	6	117	122	123	130	133	Munksjö A.-B. (*Papier, Holzmasse und Holz*) { *Ser. A*
» B	3.99	100	5	5	6	117	121	124	130	132	» *B*
» B, free[5] . . .	1	100	5	5	6	—	121	123	130	133	» *B, frei*[5]
Oxelösunds Järnverks A.-B. (Iron, Coke, Window-Glass etc.), free[5] . . .	6.17	100	10	10	10	210	215	225	235	215	Oxelösunds Järnverks A.-B. (*Eisen, Koks, Fensterglas usw.*), *frei*[5]
		100	10	10	10	210	215	225	235	215	
Sandvikens Jernverks A. B. (Iron)	25	100	[3] 3+5	[3] 3+5	[3] 3+5	186	182	185	195	192	Sandvikens Jernverks A.-B. (*Eisen*)
Skånska Cement A.-B. (Cement)	21	1 000	70	70	70	[4] 1800	1600	—	1700	1750	Skånska Cement A.-B. (*Zement*)
Stockholms Superfosfat Fabriks A.-B. (Chemical Products)	15	150	12	12	12	260	265	265	276	273	Stockholms Superfosfats Fabriks A.-B. (*Chemische Erzeugnisse*)
Stora Kopparbergs Bergslags A.-B. (Paper, Pulp, Timber and Iron)	60	100	10	12	12	337	336	340	344	353	Stora Kopparbergs Bergslags A.-B (*Eisen, Papier, Holzmasse und Holz*)

[1] Refer to dividends paid for the preceding financial year. — *Bezieht sich auf Dividenden, die für das vorgehende Geschäftsjahr bezahlt worden sind.* — [2] Ex dividend. — *Abzügl. Dividende.* — [3] Interim dividend paid in the preceding year. — *Im Vorjahr ausgeschüttete Vorschussdividende.* — [4] Selling price. — *Briefkurs.* — [5] Acquirable by aliens. — *Von Ausländern erwerblich.* — [6] Not acquirable by aliens. — *Nicht von Ausländern erwerblich.* — [7] Not quoted on the Stock Exchange. — *An der Börse nicht eingeführt.* — [8] Plus bonus shares. — *Plus Gratisaktien.* — [9] Proposed dividend. — *Vorgeschlagene Dividende.*

Quotations of Swedish Shares (Contd.).

Kursnotierungen für schwedische Aktien (Fortsetzung).

	Share Capital *Aktien-kapital*	Nom. Value *Nenn-wert*	Dividends[1] *Dividende*[1]			Prices (bid) *Notierungen (Geld)* 1944				
			1942	1943	1944	31/5	30/6	31/7	31/8	30/9
Industrial and Miscellaneous Shares (Contd.).	Mill.Kr.	Kr.	Kronor			Kronor				
Ströms Bruks A.-B. (Pulp and Timber)	12	100	10	9	9	235	220	225	238	240
Svenska Ackumulator A.-B. Jungner (Accumulators) Ord. A	2.16	100	8	8	8	175	170	172	180	180
Svenska Ackumulator A.-B. Jungner (Accumulators) B, free[5]	3.78	100	8	8	8	170	170	172	180	180
Svenska A.-B. Gasaccumulator (AGA) (Beacon Lighting etc.) Pref. shares	28.6	100	5	5	5	101	104	112	115	111
Svenska Diamantbergborrnings A.-B. (Ore Prospecting etc.)	1.89	150	25	22.50	22.50	—	400	400	430	435
Svenska Oljeslageri A.-B. (Vegetable Oils etc.)	3.6	100	6	—	4	135	136	145	155	148
Svenska Sockerfabriks A.-B. (Sugar)	81	60	3.50	3.50		84	84.50	86.50	88.50	88.50
Svenska Tändsticks A.-B. Series A	22.50	25	—	—	—	22.50	22	23.50	29	26.50
Svenska Tändsticks A.-B. (Matches) B[5]	95	25	—	—	—	22.50	21.50	23.50	28.50	27
Telefon A.-B. L. M. Ericsson (Tele- Series A	28.23	35	1.50	1.50	1.50	39.50	39	42	47	45

Government	2[1]/2 %	1935	Maturity *Rückzahlung*	1947		[15]/4—[25]/10	100	100	100[1]/2	100[3]/4	100[3]/4	*Staat*	2[1]/2 %	1935
»	2[3]/4 »	1939	» »	1969	[25]/12 1949	[15]/6—[25]/12	92[1]/2	92[1]/4	92[1]/2	92[1]/2	92[3]/4	»	2[3]/4 »	1939
»	3 »	1934	R		[30]/12 1944	[30]/6—[30]/12	91	91	91	91[3]/4	91[1]/2	»	3 »	1934
»	3 »	1937 Febr.	1938—1997 D P		[1]/2 1947	[1]/2—[1]/8	93[1]/4	93	93[1]/4	93[1]/2	94	»	3 »	1937 Febr.
»	3 »	1937 March	1938—1997 D P		[1]/3 1947	[1]/3—[1]/9	93[1]/4	93	93[1]/4	93[1]/2	94	»	3 »	1937 März
»	3 »	1941[2] 2nd Defence Loan	Maturity *Rückzahlung*	1951		[15]/2—[25]/7	103[1]/4	102[3]/4	103[1]/4	103	103	»	3 »	1941[2] *II. Wehranleihe*
»	3 »	1941 [15]/12	Maturity *Rückzahlung*	1946		[15]/6—[25]/12	101[1]/2	101[3]/4	102	102	102[1]/4	»	3 »	1941 [15]/12
»	3 »	1942 3rd Defence Loan	Maturity *Rückzahlung*	1947		[15]/2—[25]/8	101[1]/4	101[1]/4	101[3]/4	102	102[1]/4	»	3 »	1942 *III. Wehranleihe*
»	3 »	1943 [15]/4	Maturity *Rückzahlung*	1949		[15]/4—[25]/10	100[1]/2	100[1]/2	101	101[1]/4	101[1]/2	»	3 »	1943 [15]/4
»	3[1]/2 »	1933	R		[1]/11 1943	[1]/5— [1]/11	99[3]/4	99[1]/2	99[3]/4	99[3]/4	99[3]/4	»	3[1]/2 »	1933
»	3[1]/2 »	1934	1945—1974 D		[1]/10 1944	[1]/4— [2]/10	100[1]/2	100[1]/2	100[1]/2	100[1]/2	100[1]/4	»	3[1]/2 »	1934
»	3[1]/2 »	1941	Maturity *Rückzahlung*	1981	[25]/12 1951	[25]/6—[25]/12	100	100	100[1]/4	100[1]/2	100	»	3[1]/2 »	1941
»	3[1]/2 »	1942	Maturity *Rückzahlung*	1982	[25]/8 1952	[15]/2—[25]/3	100	100	100[1]/4	100[1]/4	100	»	3[1]/2 »	1942
»	3[1]/2 »	1943 March	Maturity *Rückzahlung*	1988	[15]/3 1953	[15]/3—[25]/9	100	100	100[1]/4	100[1]/4	100	»	3[1]/2 »	1943 März
»	3[1]/2 »	1943 [15]/4	Maturity *Rückzahlung*	1988	[25]/4 1953	[25]/4—[25]/10	100	100	100[1]/4	100[1]/4	100	»	3[1]/2 »	1943 [25]/4
»	3[1]/2 »	1943 [1]/11	Maturity *Rückzahlung*	1990	[1]/5—[1]/11	—	100	100	100[1]/4	100[1]/4	100	»	3[1]/2 »	1943 [1]/11
»	4 »	1933	1934—1958 D P[1]		[25]/10 1944	[15]/4—[25]/10	101	100[1]/2	100[1]/2	100[1]/4	100	»	4 »	1933
»	4 »	1940 1st Defence Loan	Maturity *Rückzahlung*	1945		[1]/5— [1]/11	103	103	103	103	102[3]/4	»	4 »	1940 *I. Wehranleihe*
»	4 »	1941 2nd Defence Loan	Maturity *Rückzahlung*	1951		[15]/2—[15]/7	106	106[1]/4	106[1]/2	107	107	»	4 »	1941 *II. Wehranleihe*
»	4[1]/2 »	1940	1946—1975 D P		[1]/4 1950	[1]/4— [2]/10	108[1]/4	108[1]/4	108[1]/2	108[1]/2	108[1]/2	»	4[1]/2 »	1940

Industrie- und diverse Aktien (*Fortsetzung*).

Ströms Bruks A.-B. (*Holzmasse und Hols*)
Svenska Ackumulator A.-B. Jungner (*Akkumulatoren*) *Stamm A*
Svenska Ackumulator A.-B. Jungner (*Akkumulatoren*) » *B, freie*[5]
Svenska A.-B. Gasaccumulator (AGA) (*AGA-Licht etc.*) *Vorzugs-Aktien*
Svenska Diamantbergborrnings A.-B. (*Ersuche u. a.*)
Svenska Oljeslageri A.-B. (*Vegetabilische Öle etc.*)
Svenska Sockerfabriks A.-B. (*Zucker*)
Svenska Tändsticks A.-B. (*Zündhölzer*) *Ser. A*
Svenska Tändsticks A.-B. (*Zündhölzer*) » *B*[5]
Telefon A.-B. L. M. Ericsson *Ser. A*

[1] After [15]/4 1944. — *Vom [15]/4 1944 an.* — [2] With annual prize drawings. — *Mit jährlichen Prämien-Auslosungen.*

• **Amortization-dates underlined.** — ***Tilgungstermine unterstrichen.***

Quotations of Swedish Bonds (Contd.)

» »	3½	» 1941	1942—1971	D P	⁷/₁₂ 1951	⁷/₆—⁷/₁₂	100¼	100⅞	100⅞	100½	100¼	» »	3½	» 1941
» »	3½	» 1943	1944—1973	D P	¹⁵/₁₀ 1953	¹⁵/₄—¹⁵/₁₀	100¼	100¼	100½	100½	100¼	» »	3½	» 1943
» »	4	» 1939	1940—1969	D P	¹⁵/₁₂ 1949	¹⁵/₆—¹⁵/₁₂	104	104	104	103¾	104	» »	4	» 1939
» »	4¾	» 1940	1941—1970	D P	¹⁵/₃ 1950	¹⁵/₃—¹⁵/₉	107½	107½	107¼	107¼	107¼	» »	4¾	» 1940
Allmänna Svenska Elektriska A.-B. (ASEA) (Electrical Machinery)	3	» 1939	1940—1964	D P	²/₃ 1944	²/₃— ²/₉	98½	98½	98½	98½	98½	Allmänna Svenska Elektriska A.-B (ASEA) (*Elektrische Maschinen*)	3	» 1939
Hellefors Bruks A.-B. (Wood & Iron Products)	4	» 1935	1940—1960	D	¹⁵/₉ 1945	¹⁵/₃—¹⁵/₉	101½	101½	101¾	101¾	101¾	Hellefors Bruks A.-B. (*Eisen u. Holzwaren*)	4	» 1935
Holmens Bruks & Fabriks A.-B. (Pulp, Paper, Woollen & Cotton Goods)	4	» 1935	1941—1960	D	¹⁵/₁₀ 1945	¹⁵/₄—¹⁵/₁₀	101¾	101¾	101¾	101¾	101¾	Holmens Bruks & Fabriks A.-B. (*Papier, Holzmasse, Woll- u. Baumwollwaren*)	4	» 1935
Krångede A.-B. (Power Co.)	3½	» 1936	1942—1966	D	¹⁵/₅ 1946	¹⁵/₅—¹⁵/₁₁	100¼	100¼	100½	100½	100¼	Krångede A.-B. (*Elektrisches Kraftwerk*)	3½	» 1936
Marma-Långrörs A.-B. (Pulp and Timber)	4	» 1935	1940—1955	D	¹/₁₀ 1945	¹/₄—¹/₁₀	101½	101	101¾	101¼	101½	Marma-Långrörs A.-B. (*Holzmasse und Holz*)	4	» 1935
Svenska Sockerfabriks A.-B. (Sugar)	3¼	» 1936	1937—1951	D	¹/₁₀ 1946	¹/₄—¹/₁₀	100¼	100¼	100½	100¼	100¼	Svenska Sockerfabriks A.-B. (*Zucker*)	3¼	» 1936
Telefon A.-B. L. M. Ericsson (Telephones)	3½	% 1937	1938—1957	D P	³¹/₇ 1942[4]	³¹/₃—³¹/₇	100¼	100¼	100¼	100¼	100½	Telefon A.-B. L. M. Ericsson (*Fernsprecher*)	3½	% 1937
Uddeholms A.-B. (Wood and Iron products)	3	» 1939	1943—1959	D P	¹⁵/₁₀ 1949	¹⁵/₄—¹⁵/₁₀	98½	98½	98½	98½	98¾	Uddeholms A.-B. (*Eisen- u. Holzwaren*)	3	» 1939

[1] The Residential Mortgage Bank of Sweden, founded in 1929, is the central organization of a number of local credit associations having for their object to grant loans to their members against mortgages on houses. It has a guarantee fund of 30 mill. Kr. in Swedish Government bonds placed at its disposal by the Government. — *Die Schwedische Wohnungshypotheken-Kasse, die im Jahre 1929 gegründet wurde, ist das Zentralinstitut einer Anzahl lokaler Kreditkassen, die den Zweck haben, an ihre Mitglieder Anleihen gegen Haushypotheken zu bewilligen. Die Bank hat einen Garantiefonds von 30 Mill. Kr. in Schwed. Staatsobligationen, die vom Staate zu ihrer Verfügung gestellt wurden.*

[2] The Swedish Ship Mortgage Bank, founded in 1929, has for its object to grant loans against mortgages on Swedish ships. As a guarantee fund for the Bank the Government has placed at its disposal Swedish Government bonds for 10 mill. Kr. — *Der Zweck der Schwedischen Schiffshypotheken-Kasse, die im Jahre 1929 gegründet wurde, ist gegen Hypotheken auf schwedischen Schiffen Anleihen zu gewähren. Als Grundkapital der Kasse hat der Staat ihr schwedische Staatsobligationen im Betrage von 10 Mill. Kr. zur Verfügung gestellt.*

[3] The Svenska Obligationskredit A.-B. is a joint stock company established by four leading Swedish banks for the purpose of negotiating credits preferably with foreign countries. Its share capital amounts to Kr. 10 000 000. The series IV is secured by 5 % German Govt. bonds of 1924, the series V by 5 % Austrian Govt. bonds of 1930, the series VI by 6 % Greek Govt. bonds of 1931 and the series VII by 4½ % Austrian Govt. bonds of 1935. — *Die Svenska Obligationskredit A.-B. ist eine von vier leitenden Banken Schwedens gegründete Aktiengesellschaft, welche die Vermittlung von Krediten vorzugsweise mit dem Ausland bezweckt. Ihr Aktienkapital beträgt Kr. 10 000 000. Die Sicherheit für Serie IV besteht aus 5 % Obl. des Deutschen Reichs von 1924, für Serie V aus 5 % Obl. des Österreichischen Staates von 1930, für Serie VI aus 6 % Obl. des Griechischen Staates von 1931 und für Serie VII aus 4½ % Obl. des Österreichischen Staates von 1935.*

[4] The company has the right to redeem the loan in 1943 at 102 %, in 1944 at 101½ %, in 1945 at 101 %, in 1946 at 100½ %, in 1947 and thereafter at 100 %. — *Die Gesellschaft ist berechtigt, die Anleihe im Jahre 1942 zu 102½ %, 1943 zu 102 %, 1944 zu 101½ %, 1945 zu 101 %, 1946 zu 100½ % und in folgenden Jahren zu 100 % einzulösen.*

[5] Selling price. — *Briefkurs.*

[6] The Bank has changed its name to Inteckningsbanken A.-B. — *Der Name der Bank ist in Inteckningsbanken A.-B. abgeändert worden.*

*** Amortization-dates underlined. — *Tilgungstermine unterstrichen.***

Quotations of Swedish Bonds (Contd.).

Kursnotierungen für schwedische Obligationen (Fortsetzung).

In percentage; ex interest. — *In %, exclusive Zinsen.*

Not quoted on the Stock Exchange.	Terms of Redemption *Tilgungsmodalitäten* D = Drawings *Auslosung* P = Purchase *Rückkauf* R = Perpetual Loan *Staatsrente*	Redeemable in Whole *Konvertibel*	Interest Dates *Zinstermine* *	Approximate Prices (bid) *Approx. Notierungen (Geld)* 1944 30/5	30/6	28/7	29/8	29/9	***An der Börse nicht eingeführt.***
A. B. Bofors (War Material) 3¼ % 1937	1941—1957 D	25/5 1947	25/5—25/11	98½	98½	98½	98½	98½	A. B. Bofors (*Kriegsmaterial*) . . . . . 3¼ % 1937
International Match Realization Company, Voting Trust Certificates				$22	$20	—	$23	$23	International Match Realization Company, *Voting Trust Zertifikate* . . . .
A.-B. Kreuger & Toll, Bearer Certificates of Deposit 5 » 1929				2¾	3	3¼	4¼	4¼	A.-B. Kreuger & Toll, *Inhaber-zertifikate* . . . 5 » 1929

* **Amortization-dates underlined.** — ***Tilgungstermine unterstrichen.***

Stockholm 1944. Kungl. Boktr. P. A. Norstedt & Söner 443900

SKANDINAVISKA BANKEN

AKTIEBOLAG

Statement of Condition September, 30th, 1944

ASSETS.

Cash in hand	Kr.	244.506.684
Swedish Treasury Bills	»	204.017.745
Bills	»	173.042.182
Loans (secured)	»	622.332.709
Current Account (secured)	»	92.808.507
Banks and Savings Banks	»	21.173.953
Sundry Accounts	»	27.983.524
Bonds	»	284.827.016
Shares	»	97.523.331
Buildings, Furniture and Fittings	»	20.013.569
	Kr.	1.788.229.220

LIABILITIES.

Bills at sight in circulation (»postremiss» bills)			Kr.	21.642.191
Deposits: at sight			»	384.340.600
at notice			»	1.093.889.911
Banks and Savings Banks			»	55.308.445
Sundry Accounts			»	63.048.073
Share Capital	Kr.	87.188.000: —		
Reserve Funds	»	82.812.000: —	»	170.000.000
			Kr.	1.788.229.220

SKANDINAVISKA BANKEN

AKTIEBOLAG

GÖTEBORG STOCKHOLM MALMÖ

Offices and Branches:

Alsterbro
Anderslöv
Ankarsrum
Arboga
Arlöv
Asa
Askersund

Bengtsfors
Billesholm
Boden
Borgholm
Borås
Bromölla
Brålanda
Båstad
Bäckefors

Dalby
Dalsjöfors
Degerhamn

Ed
Eskilstuna
Eslöv

Falsterbo (1/6-31/8)
Färgelanda

Gamleby
Grythyttan
Grönskåra
Gustavsfors
Gärsnäs
Gävle
Gökalund
Göteborg
(7 local branches)

Hallsberg
Halmstad
Hällefors
Hälsingborg
Härnösand
Höganäs
Hörby

Kalmar
Karlshamn
Karlskoga
Klippan
Kopparberg
Kristianstad
Kumla
Köping

Laholm
Landskrona
Lenhovda
Lessebo
Limmared
Lindesberg
Linköping
Loftahammar
Lomma
Luleå
Lund
Löderup

Malmö
(2 local branches)
Mariedam
Mellerud
Moheda
Målilla
Mörbylånga

Nora
Norrköping
Nybro

Perstorp
Piteå

Ramkvilla
Renland
Råå

S:t Olof
Simrishamn
Sjöbo
Skelleftehamn
Skellefteå
Skivarp
Skurup
Smålands Gällaryd
Stockholm
(19 local branches)
Svalöv
Söderhamn
Södra Vi
Sölvesborg

Teckomatorp
Tollarp
Trelleborg
Tuna

Ulricehamn
Umeå

Vaxholm
Vellinge
Vimmerby
Västervik
Växjö

Ystad

Åmmeberg
Åmål
Ånimskog
Åstorp

Älmhult
Ängelholm

Örebro
Örkelljunga
Överum